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FRONT COVER: In this Korean War scene based upon an official U.S. Army photograph from November, 1951, a soldier of Company G, 31st Infantry Regiment, 7th Infantry Division, scans terrain in the vicinity of Koto-ri for signs of enemy activity. Infantry soldiers, such as this man with his M-1 Garand rifle, represented the spirit of the Infantry at its finest.

Commandant's Note

MAJOR GENERAL JOHN M. Le MOYNE Chief of Infantry

The Infantry Leader and Army Transformation

In today's operational environment, teams, task forces, and brigade combat teams almost always are multi-branched, multi-serviced, and multi-national. The future will continue this trend. The Objective Force into which we are transforming demands it. Our infantry leaders, NCOs and officers, must prepare to meet the future leadership challenges or become irrelevant! I would like to use my last "Commandant's Note" as an opportunity to describe our vision for Infantry leader development in this rapidly transforming Army.

The Army is fully committed to transformation as expressed by the vision of our senior leaders. The Secretary of the Army states that "Transformation is an imperative. We must transform…the way we train, equip, fight, and care for people." The Army Chief of Staff stated that "We can transform today in a time of peace and prosperity. Or we can try to change tomorrow on the eve of the next war, when the window has closed, our perspective has narrowed, and our potential limited by the press of time and the constraints of resources." Much of the media focus during this transformation process has been on Army equipment and organizations. One critical aspect of this transformation is "the people of our Army." The Army Web page illustrates this in stating, "Transformation is more than technology—it's about training soldiers and growing leaders who are agile, versatile, and adaptive."

The Infantry School and PERSCOM's Infantry Branch are developing career management and professional development programs and policies tailored for Army infantry leaders, both officer and enlisted. These programs and policies are designed to develop leaders who are versatile, adaptable, and experienced in varied operational environments as well as different types of infantry organizations.

The first program focusing on enlisted professional development is the *Buddy Team Assignment Program* (BTAP). This is a simple concept that assigns soldiers as buddy-teams in One-Station Unit Training (OSUT). The buddy-team soldiers go through OSUT together and upon graduation, are assigned to the same unit. They remain a buddy-team for at least the first six months in their first unit.

The Infantry School developed buddy-team assignments based on a principle we all learned very early in our careers: the fear of the unknown when joining our first unit. The initial trials that test young infantrymen fall into perspective when a trusted buddy is on his flank. Other objectives of the program include increased performance during OSUT and at the buddy-team's first duty station, higher re-enlistment rates, and less first-term attrition.

We are developing and implementing buddy-team assignments in three phases. Phase 1 was the initial test phase designed to determine if the program was capable of meeting established objectives. Approximately 2,200 11M OSUT soldiers were assigned as part of this initial test. The Infantry Training Brigade and PERSCOM paired 1,200 of those soldiers as buddy teams in OSUT, while the remaining soldiers formed a control group. The Army Research Institute (ARI) conducted its first survey in March 2001 and published preliminary results in July 2001. These results indi-

cate that buddy-teams enhance many aspects of the soldier's initial experience in the Army. The majority of the respondents agreed that assigning buddies to the same unit is a good Army practice. Most important, unit leaders are telling us it is working and to expand it.

Phase 2 will be an implementation program that assigns almost all infantrymen as buddy teams. Most 11B soldiers entering the Army will take part in the implementation. The only infantrymen not included in the test implementation are infantry soldiers entering the Army under Ranger contracts and those in MOS 11C. The Infantry School omitted Ranger contract soldiers from the test implementation because the high degree of attrition during their follow-on training makes buddy-team assignments impractical at this time. The 11C soldiers were not part of the test implementation because manpower requirements often preclude units from assigning these infantrymen in pairs to the same unit. We will change this in the future. Phase 2 also introduces an automated assignment tool that helps us determine whether buddy-teams members actually were assigned to the same unit.

Phase 3 will include infantrymen with Ranger enlistment contracts and 11Cs in the buddy-team process once the Infantry School and PERSCOM refine assignment and tracking procedures. This phase will also seek to improve buddy-team pairing by introducing psychological profiling as part of the initial buddy-team pairing procedure.

Although buddy-team assignments are an Infantry School initiative, other branch proponents are showing great interest in this program. Some form of the program could someday see Army-wide implementation in other Career Management Fields (CMFs).

The *11-series MOS consolidation* is another significant change for infantry soldiers. In March 2001 we submitted a proposal to consolidate MOS 11B, 11H, and 11M into MOS 11B in the ranks of PVT through SFC. Additionally, all CMF 11 NCOs (including MOS 11C) in the ranks of 1SG/MSG and above will be consolidated into MOS 11Z. The Army Chief of Staff approved the consolidation proposal on 13 June 2001. The conversion process has already started for infantrymen entering the Army and will be complete by 1 October 2001.

PERSCOM's Infantry Branch will assign Skill Level 1 and 2 infantrymen (PVT–SGT) to both vehicular and non-vehicular infantry units based on the needs of the Army. Skill Level 3 and 4 infantrymen (SSG and SFC) will be given the opportunity to volunteer to cross over to a different type of Infantry (vehicular to non-vehicular and vice versa). We need about 1,000 NCOs a year out of the 17,000 available to volunteer.

Senior enlisted infantry leaders (11Z) will be assigned to all types of infantry units based on need.

The Infantry School will ease the transition process for Skill Level 3 and 4 infantrymen by creating transition schools for mechanized infantry, light infantry, and antiarmor infantry. NCOs facing assignments outside their current specialty will receive necessary transition training en-route to their new assignments. These transition schools are only temporary and the Infantry School will eventually integrate their subject matter into core NCO schools such as BNCOC and ANCOC.

The CMF 11 consolidation policy fits perfectly with an Army in transition and ensures that our NCOs will be able to meet the challenges of the future. Our enlisted leaders will have more assignment opportunities available to them and the Infantry will benefit from the new ideas and experiences brought to units by NCOs coming from a different type of infantry unit. Our NCOs will have multiple skills and diverse assignment backgrounds, and their MOSs and career management opportunities will better reflect and support this diversity. As the Army changes, they will have the skills and experience to change with it.

Meeting the challenge of Army transformation requires officers who are versatile, professionally well-rounded, and capable of leading any type of infantry unit in a combined arms environment. The Infantry School, in coordination with PERSCOM's Infantry Branch, has developed several policies and programs designed to develop infantry officers who have those professional qualities. These policies will apply to all infantry officers from Lieutenant through Lieutenant Colonel and will influence the promotion, command, and command-slating process. We will develop the Army's future leaders!

The first new policy affecting officer professional development is *the initial entry training policy for lieutenants*. This policy is designed to provide infantry lieutenants the training they need to perform in their first duty assignment and expedite their arrival at those units. We developed this policy because our lieutenants were spending increasing amounts of time completing their initial entry training, thus delaying their arrival at their first duty station. This fact—combined with the possibility of reduced pin-on time to captain to help make up the shortage in that grade—meant that we had to streamline lieutenant training. Our goal is to get infantry lieutenants into key company-grade assignments within nine months so they can gain that invaluable leadership experience before being promoted to captain.

This policy establishes a nine-month standard for the

completion of all lieutenant initial entry training at the Infantry School. Required training includes the Infantry Officer Basic Course (IOBC) and certain follow-on schools specifically required for assignment to their first unit. Those follow-on schools include Airborne School, the Mechanized Leader Course, and the Infantry Mortar Leader Course.

I strongly encourage infantry lieutenants to volunteer for Ranger training. The Infantry School will continue to provide this training for all officers who volunteer and meet the prerequisites. Although Ranger School is not required initial entry training for infantry lieutenants, it has always provided the Army with tactically competent, aggressive, self-disciplined, and confident leaders who are prepared to train and lead units in combat. We will continue to emphasize this leadership laboratory called Ranger School.

The cornerstone of infantry officer career management is the *vehicular/non-vehicular assignment imperative*. This policy focuses primarily on lieutenants and captains but will also apply to infantry majors. Under this policy, infantry officers must serve in both vehicular and non-vehicular assignments throughout their careers. Aligning with only one type of Infantry produces an officer with fewer skills and experiences. They are not professionally competent for combined, joint, or coalition operations. Vehicular infantry units include mechanized and motorized (IBCT) units while non-vehicular infantry units include light, airborne, Ranger, and air assault infantry units. An infantry officer's service in units should include platoon leader, company command, and staff positions at the battalion and brigade staff level. The length of assignment to each type of infantry slot ideally should be at least 12 months, if possible. Infantry Branch (OPMD) will assign captains to a type of infantry unit different from the type they served in as lieutenants to expand the officers' experience early in their careers. This will enable Infantry Branch to assign that officer to either type of infantry unit as a major, knowing that he has experience in both areas. If for some reason an officer is assigned to the same type of infantry unit as both a lieutenant and captain, Infantry Branch will ensure that he serves in the other type of infantry as a major. We must do this to prepare for future combat operations!

Another important part of infantry officer development is *assignment location*. Overseas duty provides our officers with experience in different operational environments, increases their understanding of foreign military organizations, and provides insights into adapting to the constraints of the host nation. Infantry Branch will assign officers to overseas locations on an equal basis, especially at the ranks of lieutenant and captain. This parity rule also ensures that the hardships and opportunities of overseas duty are distributed equally throughout the infantry.

Infantry officer assignments should also expose them to environments and procedures at different installations in CONUS. For this reason, Infantry Branch will avoid assigning officers to back-to-back tours at the same installation. No homesteading!

The Office of Infantry Proponency here at the Infantry School develops career management and professional development policies for all infantrymen. The PERSCOM Infantry Branch (OPMD and EPMD) executes these policies and provides comments to the Infantry Branch Chief on policy implementation. PERSCOM's Infantry Branch will retain the flexibility to make exceptions to these personnel policies on the basis of Army needs and other specific exceptions approved by the Infantry Branch Chief. These policy changes are ultimately reflected in updated versions of DA PAM 600-3, *Commissioned Officer Development and Career Management*, and DA PAM 600-25, *Noncommissioned Officer Professional Development and Utilization*. The Office of Infantry Proponency is updating the infantry sections of these documents for inclusion in their next publication.

Over the past few years, we have seen the Army rapidly move forward on its transition mission. Organizations, equipment, weapons, and doctrine are changing as part of this transformation. We must update and refine the career management and development policies for our infantry leaders so they can keep pace with this transition. The Infantry School remains committed to ensuring that our officers and NCOs are fully prepared to lead the Infantry and the Army, both now and in the future.

If we do not change now to meet the future needs of our soldiers, our Army, and our nation, we will run the risk of being not only professionally unprepared and irrelevant, but of also putting our soldiers at unnecessary risk, something that you and I must never again allow to happen.

A SALUTE TO THE GOLD BAR

At about this time each year a group of young men from a variety of training backgrounds pin gold bars on the collars of new uniforms and take up the profession of Infantry leadership. If you are in this group, the weeks immediately ahead, which will be dedicated toward preparing you for your first command, are too short—always too short to allow much time for pep talks, emotional preparation, or a real orientation on the challenge you have accepted. The men who must train you to lead may not have an opportunity to really identify your profession for you. Well, I have a little more time to think about such things. Pardon me now if I get a little parochial.

Whether you come from a service academy, ROTC, OCS, or direct from Fort Boondock, and whether you read this enroute to Fort Benning or Quantico, you are about to take on the toughest leadership assignment of a military career. Toughest because your challenges will be the greatest at a time when your experience is the least.

You are destined to lead men—hard, critical men who will respond to you only because you demonstrate to them that you are as good as or better than they are in every professional respect. The battalion commander can get away with not knowing all the skills in his command so well as the men who practice them daily. The platoon leader cannot.

In the best of circumstances, you will cause your men to do things that challenge them, tire them, and sometimes bore them, and you will make them do these things with enthusiasm and determination. You must, and will, use your chain of command, but at your level that chain is a short one. Never again will you deal face to face with so many individuals on a regular basis.

You have accepted the proposition that if you go to combat you will be among the men the enemy wants most to kill first.

You will be the professional director and personal counselor to men much older and more experienced than you are. They will think that if you are fit to hold the rank at a young age then you should be fit to give sound direction and valuable counsel, and they will resent your failure in either area.

Along with this professional and intellectual commitment, you are obligated to maintain your physical condition in a state only slightly below that required of a full-time athlete. Through a combination of stamina and will, you may often send your exhausted troops to rest but turn yourself immediately to another task.

You will share your triumphs with four squads of men and will bear your failures, and theirs, in what will feel like total isolation. A platoon may be better than its leader, but it is never worse.

You will watch some of your brightest ideas shatter against the anvil of reality, without even the opportunity to sulk about it for a while.

You'll sometimes wonder if people take you seriously. They do.

You'll question whether the rank you hold is an adequate crutch against poor leadership. It isn't.

On an hour-by-hour basis you will find yourself in circumstances that test your will, your skill, your strength and your judgment.

You'll love it. INFANTRY salutes you.

INFANTRY LETTERS

DRAMATICALLY IMPROVED CAPABILITY FROM JAVELIN

This letter is in response to Captain Charles L. Hiter's article, "The Antitank Section in Support of a Light Infantry Rifle Platoon" (*INFANTRY*, January–April 2000, pages 15-16).

Captain Hiter does a superb job of describing the added capabilities that an antitank section can provide to a light infantry platoon. He goes into depth exploring the employment of the antitank section with its TOW, Mk 19, and M2 weapon systems in support of light infantry platoons. However, he mentions only briefly the role of the Javelin antitank weapon system. In light of the fact that the fielding of Javelin to the Army is in full stride, it is important that readers also understand the dramatically improved capability this weapon system provides its users.

Javelin was first introduced in 1996 as a replacement for the aging Dragon. It is designed to provide light infantry forces with an effective medium antitank weapon system, capable of destroying any armored vehicle in the world.

Javelin is a man-portable, shoulder-fired, fire-and-forget system with a maximum effective range of 2,500 meters. It has an integrated day/night thermal sight called the command launch unit (CLU). With the missile, it weighs just over 49 pounds, significantly less than the 75-pound Dragon with its day and night sights. Yes, it is still relatively heavy, but it can kill any enemy armor, significantly increasing the lethality and survivability of our light forces. Furthermore, Javelin provides multi-mission capabilities against bunkers, hovering helicopters, and other threat equipment.

To date, Javelin has been fielded to the Rangers, the 82d Airborne Division,

the 1st Battalion, 508th Infantry, 2d Infantry Division, and the 10th Mountain Division. Javelin is an integral part of the Army's Transformation Campaign Plan and will be fielded to the remainder of the light forces, brigade combat teams, heavy forces, and the Army National Guard.

The Javelin's leap-ahead technology enables light infantry commanders to stop and defeat enemy armored formations—previously an extremely difficult, if not impossible, mission. Its success at the National Training Center (NTC) has caused the opposing force (OPFOR) to reevaluate the light infantryman's role in armored warfare. No longer can the OPFOR simply bypass or run though light infantry battalions. Javelin has allowed light infantry to hold and defend terrain at the NTC that it could not hold before. Javelin was so effective during its first performance at the NTC that the OPFOR was caught by surprise and quickly designated Javelin a priority intelligence requirement.

Very little has been written regarding tactics, techniques, and procedures (TTPs) for the deployment of Javelin. The U.S. Army Infantry School is in the process of completing the field manual for Javelin and expects a Fall 2001 release for distribution. There are, however, some important lessons that have been learned from four NTC rotations in which Javelin played a major role in determining the outcome of each battle:

Security: The OPFOR is quick to learn from past experience. They now continually and relentlessly seek out and attempt to destroy Javelin early in the battle. Effective light infantry companies have made Javelin the cornerstone of their defensive positions, always ensuring they are properly secured.

Emplacement: If the OPFOR's Task Force Angle doe not succeed in

infiltrating and destroying Javelin fighting positions before the battle, it will use chemical and artillery munitions in an attempt to neutralize them. The key to success is to ensure that every Javelin fighting position is properly dug-in, and includes additional missiles.

Surveillance: The Javelin thermal sight has proved to be an outstanding night surveillance device. The 1st Battalion, 32d Infantry, from Fort Drum, was extremely successful using Javelin in search and destroy missions during its recent Joint Readiness Training Center (JRTC) rotation. This added capability significantly enhanced the battalion's ability to take the fight to the enemy during limited visibility.

Resupply: During Javelin's first NTC rotation, one company—equipped with six Javelin CLUs and multiple missiles—was able to destroy approximately 60 vehicles. This was accomplished due to thorough preplanning and the use of rotary-wing aircraft for resupply during the battle. During another rotation, one company—after successfully defending its position against Task Force Angle—was able to destroy lead elements of the OPFOR before eventually expending all of its missiles. If the unit had been able to resupply that position, it would have had devastating effects on the main element of the OPFOR and significantly altered the outcome of that battle.

Clearly, Javelin will give light infantry commanders overmatch capability on each axis of the Army Transformation Campaign Plan—Legacy, Interim, and Objective. With Javelin, dismounted light forces can successfully engage and destroy modern enemy tanks from any direction, and at ranges safely outside the effective range of the enemy armored vehicles' coaxial machineguns. Javelin's superior lethality,

combined with its extremely small logistical tail, enables the rapid deployment of forces capable of carrying out antitank missions. Furthermore, Javelin's program of pre-planned product improvements will help retain a potent overmatch capability against enemy armored systems until at least the year 2025.

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IBCT MUST BE A COMBAT FORMATION, START TO FINISH

The article "Observations on the IBCT/and the FBCB2," by Captain Jeffrey A. Saeli (*Infantry*, May-August 2000, pages 27-31) is thought provoking. But I hope it is not an indication of where we are going with the IBCT. The IBCT cannot become a beefed up MP brigade; it must be a combat formation from start to finish.

The initial IBCT concept was to create a formation that was a cross between the physical abilities of the light infantry and the increased combat capabilities of our heavy forces. The rationale for the mix was to increase the combat capability of the light forces while increasing the deployability of a heavier force.

The sentence that reads, *The IBCT is emerging as a multi-functional team that retains lethality as a capability but not as its principal purpose, except in major theater war* is expressing an unbelievably dangerous concept for the soldiers in that brigade. A combat formation has to have as its main purpose the ability and willingness to engage in combat.

The Dutch battalion in Sebrencia was a combat formation that, for several reasons, was unable to conduct necessary combat operations when such operations they were needed. The resulting travesty not only embarrassed the Dutch Army and Government but also resulted in one of the worst mass murders of the entire sordid episode in Bosnia. The United States can never allow our armed forces to be in a similar situation. A doctrine that emphasizes negotiation as a form of combat is a recipe for disaster.

The author further states, *This force (the IBCT) could serve as a pre-combat or a post-combat force, able to execute civil missions in a hostile environment that does not involve unrestrained combat.* This might be a great capability for the country to have, but it does not describe a combat brigade. The formation as the author describes should be a composite brigade based on an MP unit.

One sentence begs for comment: *Upon the initiation of broader hostilities, the force (the IBCT) must be able to protect itself long enough to allow the theater employment of more robust combat forces.* We cannot put a unit in a situation where it will "protect itself" while waiting for help. The IBCT must be trained and organized to fight and to do so effectively against any capability. Obviously, some situations would require augmentation for the brigade.

Our heavy forces in Bosnia were capable of conducting the peacekeeping role while retaining the ability to fight, if required. The IBCT is an interim step on the road to a new force for the Army, based on new technology and a perceived need to deploy more rapidly. The IBCT should not become anything other than a combat formation that is also capable of other functions.

JACK E. MUNDSTOCK
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ARMALITE AR-10: QUICKER, LESS EXPENSIVE, LESS PAINFUL

Reference Don Loughlin's letter (*Infantry*, January-April 2000, page 3) in response to Stanley C. Crist's article ("Is 6mm the Optimum Caliber?" September-December 1999, page 6), his comments on the cost of switching to a ballistically superior 6mm service cartridge need some comment.

First, replacing the service rifle would not cost much when compared with the cost of today's nuclear submarines, aircraft carriers, and fighter aircraft. The cost of a few Air Force drop tanks could probably equip a couple of infantry companies with a new rifle. On the other hand, lack of common ammunition among NATO countries is a valid concern.

I have a quicker, less expensive, less painful solution: Buy the Armalite AR-10 in 7.62mm NATO for U.S. Army infantry and Marine Corps rifle companies. While the Army fiddles with the objective individual combat weapon (OICW) concept, here is a fully developed rifle, already in production, which can easily be furnished with full automatic selector or in three-shot burst configuration.

We owe this to our Marine and Army infantry. The 5.56mm round, always a poor choice for infantry, is even more so today with the closing threat of more urban combat. Although the M16's high-velocity, unstable bullet is often cited for its lethality, it is not necessary to mutilate a soldier to put him out of action. A soldier tagged with a 7.62mm NATO is still out of the fight. The AR-10 7.62mm can do everything the 5.56mm M16 can do and do it better at longer ranges, through trees, walls, sandbags, and urban fortification.

The rest of the M16 inventory can be used to arm the service troops—a perfect role for it. (Remember that the M16's predecessor and the 5.56mm cartridge were originally designed for use by Air Force police.) As for the squad automatic weapon, keep it or give it to the service troops for defense. Ideally, a new 7.62mm squad automatic weapon should be developed, possibly a bipod-equipped, heavy-barrel version of the AR-10, firing from an open-bolt and using the same magazine as the rifle.

I am not optimistic about the OICW for the near future. Didn't we go down this road a few years ago with the Special Purpose Infantry Weapon?

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U.S. ARMY AND MARINE CORPS ON OKINAWA

I read with interest Mr. Nicholas E. Sarantakes' article on interservice relations between the Army and Marine

Corps in the battle for Okinawa (*Infantry*, January-April 1999), pages 12-15). Although I agree that this particular battle was a very good example of interservice cooperation for the most part, he perpetuated a number of myths that need to be addressed.

First, the concept that United States Army tactics focused on overwhelming firepower in a head-on confrontation is ridiculous. The implication that the Army relied on frontal assaults while the Marines practiced maneuver warfare is silly. You will not find this concept in Army doctrinal publications of the day, and neither will you find it in general practice during World War II—though at times and in certain circumstances, it was the only tactical option.

The idea that you shouldn't use overwhelming firepower if it is available and can save lives is equally ludicrous. Both Soldiers and Marines used it in great quantities in the Pacific war, especially naval gunfire. We had (and still have) the best artillery and indirect fire control in the world, and we would be foolish not to employ it.

Okinawa on the negative side shows the growing struggle, which continues today, over roles and missions, part of which involves who gets credit (largely in the press) for their contribution to victory. Prior to World War I the Marine Corps had very little to do with America's wars. Competition for a significant ground combat role began with World War I and the brave performance of the Marine brigade as part of the 2d Infantry Division. This was lauded in American newspapers in direct contravention of General John Pershing's orders not to publish items that identified units. The result was a predictable disgust on the part of the American Infantrymen serving in the 30 Army divisions of the AEF (read, sixty brigades), who performed with equal bravery. They were the ones who bore the brunt of the fighting and were, by far, the greatest contributors to victory.

This same situation occurred, as Mr. Sarantakes described, in the Pacific war and has repeated itself in almost every conflict since then. This is not to dilute the sacrifice of Marines. However, to somehow enhance their reputation at the expense of the American Soldier is flat wrong. Even today, most Americans think Okinawa was a Marine fight (as many think the whole Pacific war was prosecuted by the Marines). In fact, four Army divisions fought on Okinawa as opposed to two Marine divisions. It was predominantly an Army operation.

Interservice cooperation on the battlefield of Okinawa was good, but not as good as Mr. Sarantakes describes. He coveniently left out the 1st Marine Division's grab for Shuri Castle literally minutes before air strikes and artillery were about to rain down on this 77th Infantry Division objective. With the approval of the 1st Marine Division commander, elements of his unit crossed not just a division, but a known corps boundary between the Army Corps and the Marine Amphibious Corps with no coordination to seize this prominent terrain feature just ahead of the 77th. Only feverish efforts by Major General Andrew Bruce, the 77th Division commander, to stop the preparation averted disaster.

One final point concerns the 27th Infantry Division, Marine Lieutenant General Holland M. "Howlin' Mad" Smith and the relief of Major General Ralph Smith, commander of the 27th. The idea that the 27th was a "substandard National Guard" outfit is a long proliferated myth, a product of the ineptitude of General Smith's planning and execution of the Saipan campaign and his well known dislike and almost paranoid distrust of the Army (and the Navy as well). In fact, the 27th, which was a National Guard outfit, bore no resemblance to its original organization by the time it was brought up to strength with replacements and trained for combat.

General Ralph Smith himself was a regular Army officer who had been in the first convoys of troops from the 1st Infantry Division to arrive in France for World War I, where he fought with both the 1st and 4th Divisions and was wounded in combat. General H.M. Smith, likewise was in the first convoys but served as a brigade liaison officer and subsequently at corps level, seeing little combat action. On Saipan, General Smith's plans went awry. His orders to commit the 27th as his Corps reserve afloat were scanty, confused, inadequate by any standard, and given without regard to where the troops should land or what their mission was to be.

The particular instance in Mr. Sarantakes' footnote about the 27th making the least amount of progress is particularly galling. I would suggest the author do a detailed research of the fight for "Death Valley," the terrain in question. The Marines had made no progress there either and elements of the 27th were thrown into the center of the Marine line, once again with minimal instructions or coordination. While Marine units were able to make some progress on the less well defended flanks, units of the 27th had to advance over open terrain into the valley, dominated by defended ridges and cliffs.

It is interesting to note that neither General Smith nor members of his staff during this time ever made a personal reconnaissance of the area where he was committing the Army troops—preferring to remain on the beach. Except for a limited role in the attack on Iwo Jima, General Smith was never again given a chance at combat command. This single fact provides a powerful statement by his non-Army superiors regarding his capabilities as a senior commander of joint forces.

If Okinawa was an example of interservice cooperation, Saipan was the perfect example of what can happen when senior commanders in a joint command do not have a good appreciation for those outside their own service. All senior commanders must remember that those in their charge are Americans fighting for their country, regardless of service, and hence worthy of respect and credit. If this is not done, the negative result can linger for decades and become accepted fact, where the truth is something entirely different. Lieutenant General Simon Bolivar Buckner had this appreciation; Lieutenant General H.M. Smith did not. Perhaps this is the real lesson of Okinawa.

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INFANTRY NEWS
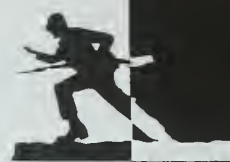
THE MODULAR LIGHTWEIGHT load-carrying equipment (MOLLE) system will be issued to Army units beginning in October 2001. One of the main components of the system is its nylon mesh vest with removable pockets to accommodate different carrying needs. Examples of the MOLLE's versatility are the fighting load carrier configurations for rifleman, grenadier, pistol, SAW gunner, and medic.

Developed at the U.S. Army Soldier Systems Center (Natick), the MOLLE is an Army and Marine Corps item that replaces the aging ALICE (all-purpose, lightweight, individual carrying equipment) pack and integrated individual fighting system introduced in 1988.

New technology centers on the MOLLE's frame, which was first built as a model in a Natick facility. Instead of the tubular aluminum used with the ALICE, a new anatomically contoured frame, made with a plastic originally used in automobile bumpers, has dramatically increased durability, functioning in temperatures ranging from –40 to 120 degrees F. In tests, several ALICE frames cracked after a single drop at 33 feet per second, while the MOLLE frames took the same abuse five times without any damage.

The system also advances load-carrying ability with its new suspension system. Heavily padded shoulder straps and waist belt are adjustable for varying torso lengths, eliminating the two sizes of the ALICE pack. More weight is distributed at the shoulders and hips, and during a prolonged road march, soldiers can shift the weight to improve comfort.

The fighting load carrier (FLC) replaces the load bearing equipment (LBE) web belt and suspenders of the ALICE. Soldiers can significantly increase the amount of ammunition they carry, and the weight is evenly distributed across the torso. The vest has no metal clips or hooks that can be awkward and dig into the skin, and has an H–harness in back to minimize heat buildup. It is adjustable to all sizes, and the vest sits high, so that soldiers can fasten the MOLLE frame waist belt underneath the FLC to distribute some of the load to the hips. Each of the three flap pockets on the FLC holds two 30-round magazines, two grenade pockets, and two canteen pouches.

The rucksack has a front pocket to hold a claymore antipersonnel mine. Inside is a bandolier with a capacity for six 30-round magazines and a removable tactical radio pocket. A detachable sustainment pouch on each side is big enough to hold MREs (meals, ready-to-eat) with room to spare, and underneath the rucksack is a compartment designed to hold the Army's new modular sleeping bag.

Every MOLLE comes with a tube-delivered water pouch for on-the-move hydration to supplement the one-quart canteen. Although the pouch is not for use in an environment contaminated by chemical or biological agents, efforts are being made to develop a mobile hydration system for all conditions.

Adapting to the mission will be easier with a detachable pack. The pack holds gear such as extra water, rations, and ammunition soldiers would need for 72 hours or less, without other items that might get in the way. They can move to the objective, dump the big pack, take off the detachable pack, and then go to the fight. The side sustainment pouches can be removed from the rucksack and placed on the patrol pack for the same carrying capacity as the medium ALICE.

Based on user feedback on the original system, the MOLLE requirements were modified to eliminate the need for a quick-release frame that integrates into the load-bearing vest. The change allowed developers to replace the probe and socket mechanism, which caused problems in donning for some soldiers and marines, to a quick-release mechanism for a more traditional permanently mounted waist belt on the frame.

All of the larger pouches, such as the outside rucksack pouches, have D-rings for carrying with a sling and use plastic see-through identification windows so soldiers don't have to put their names with markers or tape onto the MOLLE's camouflaged, urethane-coated nylon fabric. Each system comes with two six-foot lashing straps for carrying large objects, such as a mortar base plate or five-gallon containers. If one of the plastic buckles breaks, a repair kit carries spares for simple replacement.

Soldiers from the 25th Infantry Division in Hawaii tested the MOLLE for six months, and it was well-received, even with loads exceeding 120 pounds. A two-hour block of new equipment training on the system will be given to troops during initial fielding.

THE ARMY'S IMPROVED INTERMEDIATE COLD/WET BOOT was recently fielded. The two major changes are a removable insulation liner and a softer, more flexible mid-sole.

The first version of the boot, which was fielded in the early 1990s, filled the void between the standard-issue leather combat boots—which offer minimal performance in cold and damp conditions—and the extreme cold weather vapor barrier boot—which locks out the cold and wet with its rubber-enclosed air chambers, but doesn't breathe.

The current 10-inch-high intermediate cold/wet boot provides a compro-

mise for dismounted soldiers operating in cold, wet environments where the average temperature is 10 below zero to 40 degrees F. But when the inside gets soggy the comfort level drops and the insulation is useless.

Soldiers wearing these boots must depend on extra boots to change into while the wet ones dry. They also use boot dryers to speed the process. Both solutions are expensive and inefficient.

The boot's upper is still made of military-specification leather that is highly water-resistant and breathable, bonded with Gore-Tex lining. But the 200-gram insulation liner can now be pulled out and replaced with a dry one, allowing soldiers to continue wearing the same boots. Instead of being issued two or three pairs of boots, they will have extra washable liners. (Two liners come with the boots, and more will be available if necessary.

Both versions of the boots will be available until the stock of the current intermediate cold/wet boots is depleted. More changes are planned for a future model.

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THE ADVANCED BOMB SUIT, developed at the U.S. Army Soldier Systems Center (Natick), will replace the legacy PS-820 bomb suit beginning next summer.

The PS-820 suit was first fielded in 1988 to Army explosive ordnance disposal (EOD) units. Until then, their main protection had come from a flak vest and helmet. Although the current suit still performs as designed, many improvements are needed.

The present suit's 61 pounds of aramid armor, fiberglass, and polycarbonate is unevenly distributed, which could throw a technician off balance during delicate operations, and the area behind the legs is uncovered. In addition, the face shield fogs up on a cool day, its shape distorts depth perception, and its bulk is clumsy and intrusive.

The new suit uses a compact face shield attached to a ballistic and impact-protective helmet instead of a chest plate with a contoured face shield attached on top. A ventilation system helps clear the visor and provides fresh air. The new suit integrates the Soldier Intercom System into the helmet for hands-free communication with the command post and other team members.

The current suit was designed to withstand fire, heat, and impact from high-speed fragmentation. The new suit enhances these capabilities by adding tougher upper leg and abdominal protection along with impact protection to the head and spine. Although the new suit is expected to weigh slightly more than the legacy PS-820, its new generation of ballistic material protects better, and the weight is better distributed.

The new suit can be removed within seconds when an injured soldier must be transported for medical treatment.

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THE LASER EYE PROTECTION PROGRAM at the U.S. Army Soldier Systems Center (Natick) is dedicated to finding better ways to guard against the danger of eye damage from lasers.

Lasers were first demonstrated in 1960. Natick then established a laser laboratory to research the field, and Army scientists publicized the danger of flash blindness caused by lasers.

The first laser eye protection was available in 1999 during Operation *Desert Storm*. Sun, wind, and dust goggles for combat vehicle troops; ballistic/laser protective spectacles for dismounted wearers of prescription eyeglasses; and special protective eyewear, cylindrical system for dismounted troops with normal vision all protect against two or three wavelengths within the electromagnetic spectrum and are currently fielded items.

A project to incorporate laser eye protection into combat vehicle periscopes may remove the need for operators to wear goggles inside. Natick is finishing a three-year joint Science and Technology Objective with the Tank Automotive Research, Development and Engineering Center in Michigan demonstrating a periscope retrofitted with laser protection.

Researchers are seeking ways to block all types of laser wavelengths, but only when they are present. The idea can be compared to sunglasses that darken when they are worn outside on sunny days, except that the transition will tune out the frequency in picoseconds (a millionth of a millionth of a second). The best materials the military services have presently are not sensitive enough to either darken or block the wavelengths.

The Army's Laser Lab at Natick has close ties with laser protection research in the Navy and Air Force, because the underlying protection required is common to all.

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THE COMMANDER'S SMART BOOK will provide Army leaders with a centralized source of information on combat service support equipment and systems.

A compilation of facts and figures on various products, the book helps show commanders what is available and how to get it. It is especially helpful during deployments into isolated locations. Initially, the book focused on shelters and heaters, but it grew to include combat soldier support items, things that improve the lives of soldiers.

The three-ring binder started with 20 pages and has now expanded to about 80 pages. As a type of "consumer guide" for brigade commanders, it contains current items and products that will become available within two years.

The focus is on items developed by the U.S. Army Soldier and Biological Chemical Command's Natick Soldier Center, but also includes items developed by the U.S. Army Communications-Electronics Command at Fort Monmouth, New Jersey.

Several sections have buyer's guides that list overviews of key characteristics, safety considerations, or both. For instance, the non-powered heaters section notes that they are multi-fuel operated and cautions against using commercial unvented kerosene heaters.

Updates are planned for every six months. The book contents will also be offered on a CD-ROM, both with an initial run of 200 copies. Although much of the information about these products is already in publication, the Smart Book brings all the pieces together.

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Using Devices
To Predict Live Fire Marksmanship

JOSEPH D. HAGMAN

In these times of shrinking resources, marksmanship trainers are often under pressure to do more with less when training soldiers to become—and re-main—proficient shooters. The guid-ance is out there, but constraints in time, ammunition, and range availability of-ten force compromises.

Given this situation, would you be interested in a tool that will make your job a little easier by helping you do things with training devices that you've never been able to do before? We at the Army Research Institute (ARI) field office in Boise, Idaho, have developed just such a tool and designed it to help you make the most of the device-based portion of your rifle marksmanship training program, whether it is geared for initial or sustainment training. As you read on, you'll find out exactly what the tool is, how it works, and what it can do for you.

The tool is a floppy-disc-based soft-ware program, designed to run in a Windows 3.1/95/98 environment. It uses the calculated relationship between device-based and live-fire-based marks-manship performance to predict how well soldiers will shoot on the range. The tool can calculate these predictions for any live-fire evaluation event (such as record fire qualification) that can be simulated on a training device—the Multipurpose Arcade Combat Simulator (MACS), for example—provided the same scoring procedure is applied to each, and the relation between the two sets of scores is good enough to support accurate predictions. When you enter the device and live-fire scores and click the button, the tool automatically per-forms the statistical analyses needed for calculating the predictions; then it saves the results of your work for future refer-ence.

The steps you will need to create, view, interpret, and use the tool's pre-dictions are listed under the main menu options shown in Figure 1. You simply click on the desired option to enter, or obtain, the information requested. It's that easy.

Clicking on the "Introduction" button gives you guidance on what kind of device and live-fire data will need to be collected and then entered; tips on how these data should be collected for best results; and helpful hints on how to navigate successfully through the pro-gram.

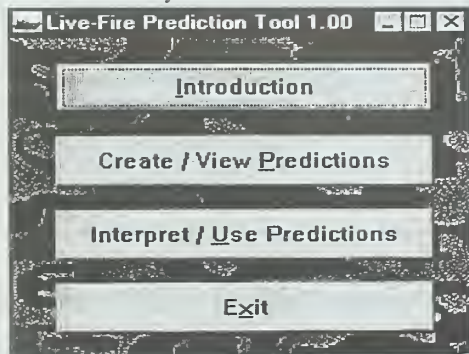Clicking on the "Create/View" button will lead you to the "Prediction Log"
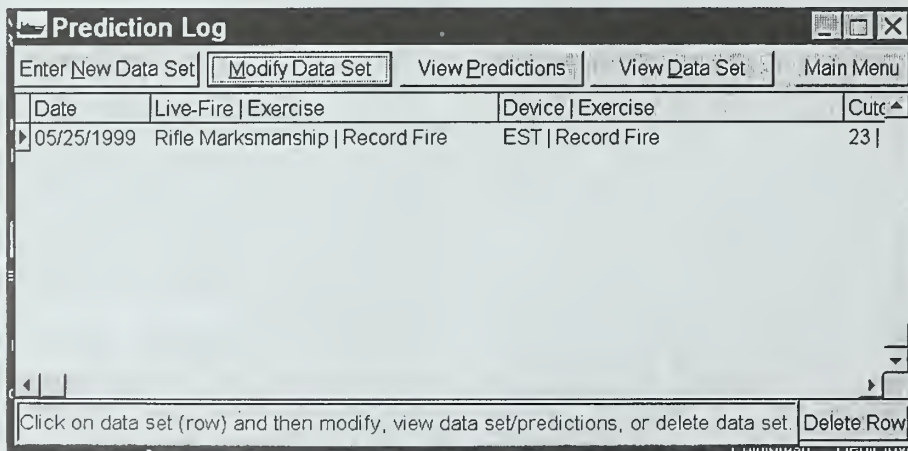

Figure 1. The Prediction Tool main menu.

Figure 2. The Prediction Log screen.

Figure 3. The "Enter Scores" screen.

Date: x/xx/xx
Range: 40-target pop up
Location: Montana

Division: N/A
Brigade: 116th Cav
Battalion: 1-163rd
Company: A-D

PREDICTED RANGE RECORD FIRE SCORES FROM DEVICE (EST) RECORD FIRE SCORES

DEVICE SCORE	PREDICTED AVERAGE RECORD FIRE SCORE	PROBABILITY (%) OF RECORD FIRE SCORE		
		>23	>30	>36
1	19	10	--	--
3	20	20	--	--
5	21	30	--	--
7	22	40	--	--
9	23	50	--	--
10	24	60	--	--
12	25	70	--	--
13	26	--	10	--
14	26	80	--	--
16	27	--	20	--
17	27	--	90	--
18	28	--	30	--
20	29	--	40	--
21	30	--	50	--
23	31	--	60	--
24	32	--	70	10
26	33	--	80	--
27	33	--	--	20
29	34	--	90	30
30	35	--	--	40
32	36	--	--	50
33	37	--	--	60
35	38	--	--	70
38	39	--	--	80

Figure 4. Sample Prediction Table

screen, shown in Figure 2, where the results of your work will eventually be stored for permanent access.

Clicking on the "Enter New Data Set" button on the "Prediction Log" screen (Figure 3), where the device and live-fire data collected earlier are to be entered, along with information needed to identify your data set. This information includes the category of live fire to be predicted (for example, rifle marksmanship), the specific live-fire exercise or event scores to be predicted (record fire qualification), the training device to be used for prediction (MACS), the specific device exercise scores from which predictions will be based (scores obtained on a simulated record fire exercise), the cutoff scores against which predictions will be calculated (e.g., the minimum scores of 23, 30, and 36 for Marksman, Sharpshooter, and Expert rating levels, respectively), the maximum possible live-fire score obtainable (e.g., 40 hits), and specific unit/range information to help you keep track of where and from whom the data were collected.

Once you've entered the requested information, clicking on the "View Predictions" button sets the program into action and presents you with the resulting predictions. They will be displayed in table format like the one shown in Figure 4. Column 1 will contain a range of device scores; Column 2, the predicted average live-fire score for each device-score listed; and Columns 3–5, the predicted chances of firing at or above the live-fire cutoff scores that you entered earlier (that is, 23, 30, and 36).

Lastly, clicking on the main menu's "Interpret/Use Predictions" button will give you guidance on how to do that for the predictions provided. For instance, using the sample prediction table that we derived from a reserve component unit's scores fired on the Project SIMITAR's (Simulations in Training for Advanced Readiness) version of the Engagement Skills Trainer (EST), it would be predicted that a soldier with an EST score of 17 would, on the average, fire 27 on the live-fire range and have a 90 percent chance of successful record-fire qualification at the Marksman level, and a 20–30 percent chance of qualifying Sharpshooter level. A soldier with an EST score of 26 will fire 33 on average and have more than a 90 percent chance of qualifying Marksman, an 80 percent chance of qualifying Sharpshooter, and a 20–30 percent chance of qualifying Expert, and so forth. To show the tool's flexibility, we've also used it to derive analogous predictions of Tank Table VIII scores from Conduct-of-Fire Trainer (COFT) scores in support of the RC armor community.

Device and live-fire data collected earlier are to be entered along with information needed to identify your data set.

So what can the tool do for you? For starters, you can predict soldier record fire performance *on your range* from scores fired *on your devices.* Second,

by using the tool for pretesting, you can schedule device-based training more efficiently by targeting only the crews in need of remediation (those who do not meet the device-based live-fire expectancy standard set by your unit commander—for example, 80 percent probability of qualification at the Marksman level). Third, by using the tool for post-testing, you can determine exactly when your crews have received enough initial or sustainment training (when they have met this expectancy standard). Fourth, you can save ammunition for other purposes by allowing only the soldiers who are ready for successful qualification to fire on the range.

And lastly, having such a tool will enable you to substitute device-based qualification for live-fire-based qualification when ranges are not readily available. Of course, shooting record fire on a device instead of a range is still a controversial notion, but if and when the time comes for its acceptance, you'll have the tool to make it work.

To request a copy of the prediction tool software, contact Dr. Joseph D. Hagman, U.S. Army Research Institute, Reserve Component Training Research Unit, 1910 University Drive, Boise, ID 83725; commercial telephone 208-334-9390; fax 208-334-9394; e-mail address hagman@ari.army.mil.

The tool can also be downloaded from the ARI website at www-ari.army.mil. Once at the website, click on "Products," then on "Recently Completed ARI Products," then on "Predicting Live-Fire Performance," and follow the downloading instructions presented there.

Joseph D. Hagman is a senior research psychologist at the U.S. Army Research Institute's field office at Gowen Field, Idaho (208-334-9390). He received a Ph.D. in engineering psychology from New Mexico State University. His research interests are in human learning and memory and, more recently, in soldier performance on armor- and infantry-related simulation and training devices.

First Sergeant Duty

MASTER SERGEANT BERTRAM F. VAUGHAN

The first sergeant's role in the Army is time-honored and rich in custom and tradition. The primary duties of the first sergeant have changed very little since the days of the American Revolution, when General Friedrich Wilhelm von Steuben described them:

• Enforce discipline and encourage duty among troops.

• Maintain the duty roster.

• Keep the company descriptive book. (This book listed the name, age, height, place of birth, and prior occupation of every enlisted man in the unit. Today, it would be known as a "Leader Book.")

Still, the duties included under these three broad headings are so complex that one manual could not hold all of the information required.

A 35-day first sergeant course is taught at Fort Bliss, Texas, under the auspices of the U.S. Army Sergeants Major Academy. This course is fast-paced and designed for first-time first sergeants. Several posts offer a five-day orientation course designed to familiarize commanders and first ser-

geants with local policies and procedures.

A first sergeant must have a high level of competence, energy, and motivation, and must be able to communi-

cate effectively. He promotes enlisted welfare, morale, and health issues; helps the commander maintain discipline and standards of conduct; and provides guidance on matters of leadership,

military justice, and customs and courtesies. A first sergeant's professional conduct and appearance must be exemplary.

If you are motivated by the challenge of personal and professional managerial growth, this could be the job for you. If you are willing to deal with real people, real issues, and refine your counseling skills, this could be the job for you. If you are willing to deal with case after case of negative issues, only to help and occasionally make a difference with that one soldier, this could be the job for you. These types of intrinsic rewards will carry you through and give you what it takes to be a first sergeant.

The Interview

Although the Department of the Army assigns first sergeants and master sergeants to units, the battalion commander and command sergeant major (CSM) decide who will be first sergeant. The following are some of the traits and qualities that will be expected of you:

Desire and motivation. First, you

must really *want* to be a first sergeant; if you don't, you may prove to be a detriment to the unit.

Integrity. Your integrity must be above reproach. Commanders and soldiers must be able to trust you and know that they can talk to you in confidence when they need to.

Leadership. A good first sergeant will also serve as a good mentor. If you are leading the way, soldiers will want to do things the way you do them. You should set aside time to share experiences with young leaders to make them better NCOs.

Dedication to duty. You must develop a system that will enable the unit to accomplish all its missions. This can mean starting before the duty day and completing it after day's end. You must also check on training to ensure that the commander's intent is being met.

Tactical knowledge. No longer is there a *field* first sergeant or *field* soldiers, just *soldiers*. Field training actually starts in the garrison area and can determine success in the field; that is, Sergeant's Time training. In the field, you must be able to spot-check positions, or maneuver with an element to strengthen the leadership.

Counseling development. Counsel the platoon sergeants, teaching them how to do their jobs and how to develop their subordinate NCOs.

Knowledge of regulations. Regulations change often, and you will have to stay abreast of the updates.

Keeping the commander informed. As the company's senior enlisted advisor, you will have to be able to talk to the commander on behalf of the soldiers so that he will have the information he needs to make the best decisions for the soldiers and the mission.

Standards. You will have to lead from the front and set the standard, not only in uniform appearance and on the Army Physical Fitness Test, but in off-duty conduct as well. When soldiers see the first sergeant out doing physical training, they push themselves that much harder. Upholding the seven Army values—loyalty, duty, respect, selfless service, honor, integrity, personal courage—is essential to unit cohesion.

Time management. Develop a schedule. Allow yourself time to check your e-mail messages without tying yourself to your desk, check on soldiers and the daily unit operations, and allow time for the CSM/First Sergeant meetings.

Military justice. You must be familiar with the Uniform Code of Military Justice (UCMJ). Then, do what you know is right, and make the appropriate recommendations for disciplinary measures.

Commanders will also expect the following from you as first sergeant:

• Support the CSM.

• Handle all soldier problems, and keep the commander informed.

• Make sure instructions are followed and tasks are completed.

This list is far from all that is needed to accomplish all of the tasks associated with first sergeant duties. I have brought out some key points. Several lessons will be taught by the CSM, while many others will be taught by experience on the job.

Master Sergeant Bertram F. Vaughan was S-3 NCOIC of the 1st Battalion, 174th Infantry Brigade, at Fort Drum.

The Hasty Air Assault
"Special Staff Officer"

LIEUTENANT MATTHEW C. DENSMORE

Hasty air assault operations give an infantry company, battalion, and brigade the flexibility to project a fighting force in both offensive and defensive operations. They allow the infantry to surprise the enemy and gain or regain the initiative and quickly reposition forces. As air assault infantry battalions and brigades increase the use of the hasty air assault to influence the battlefield, it is evident that having an aviation liaison officer (LNO) in the infantry battalion tactical operations center (TOC) would greatly enhance the flow of information and the success of the operation.

Textbook battalion and brigade landed air assaults follow a deliberate planning and coordination time line and chain of command. The infantry battalion or brigade requests air assets through the brigade S-3, who passes it on to his S-3 Air and the aviation LNO, who passes it to the supporting aviation battalion S-3. Eventually the specifics of planning and coordination reach the aviation company commander, platoon leader, and flight leaders through the formal air mission coordination meeting (AMCM) and air mission brief (AMB). Usually, there is enough time to adjust to intelligence updates on the enemy situation and changes in the ground tactical commander's scheme of maneuver to enable the supporting aviation platoons and companies to react to changes. For the hasty air assault, however, the situation usually dictates that a unit air assault one or more company

teams in 12 hours or less. The compressed planning time of a hasty air assault can lead to the loss of critical information between the ground tactical commander and the supporting aviation because there is no formal AMCM or AMB.

Thus, it is essential that an aviation LNO be working with the infantry battalion staff at the battalion's TOC throughout the compressed planning phase and throughout the execution of the hasty air assault. Where is the infantry battalion's S-3 Air, or the brigade's S-3 Air and aviation LNO? The battalion S-3 Air is relaying the commander's plan to the battalion staff and supporting aviation and selecting and establishing pick-up zones (PZs), both light and heavy, and PZ control. He is also staging the infantry companies for loading. The brigade S-3 Air and aviation LNO are probably continuing their management of airspace and supporting the other infantry battalions' air assault operations—including aerial reconnaissance and aerial resupply—leaving a void in this quick-reaction mission planning at the battalion level. An air assault infantry task force that strives to control the battlefield and stay ahead of the enemy must, therefore, provide the infantry battalion with an aviation LNO for that specific mission.

The aviation LNO would serve two main purposes in the infantry battalion TOC: First, he would translate the ground tactical commander's plan and intent into understandable tasks to the lift and attack aviation company commanders, platoon leaders, and flight leads. Since little time is available to prepare for a hasty air assault, time management becomes even more important than usual. The aviation LNO should be able to communicate directly with the supporting aviation company commanders, platoon leaders, and flight leaders to reduce the time it takes for the information to travel through normal channels. Second, the aviation LNO could provide the necessary updated information directly to the supporting aviators on the coordination specifics as the enemy situation and the ground tactical commander's plans are refined.

As an example, at 0800 hours, 3d

Battalion receives the mission to conduct a hasty air assault 12 kilometers to the west, no later than 2000 hours that day to conduct a deliberate attack on the enemy's combat trains in order to disrupt their lines of communication and reduce their ability to resupply. After hasty mission analysis and preparation of a fragmentary order, the battalion assigns the mission to Company A at 1000 hours. At 1300 hours the battalion S-3 Air, the aviation LNO, and the infantry company's XO conduct a hasty AMB discussing the operation's staging, loading, air movement, and landing phases.

At 1400 the battalion S-3 Air leaves to reconnoiter and set up the light and heavy PZs and establish PZ control. The aviation LNO relays all the hasty AMB information to the assigned lift

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The compressed planning time of a hasty air assault can lead to the loss of critical information between the ground tactical commander and the supporting aviation,

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and attack aviation units, and he coordinates with the battalion and brigade fire support officers for the field artillery's SEAD (suppression of enemy air defenses) mission and the Air Force's close air support mission. He does all of this to help the battalion staff ensure that the airspace and preparatory fires are properly timed and managed. At 1800 the brigade S-2 informs the battalion S-2 that scouts have reported that the location of the enemy trains has changed and that the primary LZ is too small to land any aircraft. The battalion S-2 informs the Company A commander, who quickly changes the landing plan, adjusts his scheme of maneuver and actions on the objective, and relays the information back to the battalion TOC. The aviation LNO contacts the lift aviation flight lead and updates the LZ location, land heading, door exit, and door gunner status. He also informs the attack aviation flight lead and battalion FSO of the changes in the location of the objective so they can quickly update the first plan.

At 1930 the Company A commander and his company load the aircraft. He radios the flight leader and confirms that he has received the latest changes. Because the aviation LNO was present at the battalion TOC and could quickly pass updates and coordinate with the aviators who are executing the mission, the lift and attack aviation flight leaders have the latest information. If the aviation LNO had not been in the TOC to pass the information, the flight leaders would have been flying blindly into an alternate LZ with no preparation. Furthermore, and even more devastating, the Company A commander would have lost the advantage of effective attack, field artillery, and CAS preparatory fires, consequently facing a full-strength enemy on the objective.

This example shows how having an aviation LNO at the battalion TOC can greatly contribute to the success of hasty air assault operations. Field Manual (FM) 90-4, *Air Assault Operations*, states that "an aviation liaison officer should be provided to the air assault task force from the supporting aviation unit and should be considered a special staff officer. His role is to advise the air assault task force commander on all matters relating to Army aviation and to jointly develop the detailed plans necessary to support the air assault operation. During the execution phase, he should be available to assist the air assault task force commander or S-3 Air in coordinating the employment of aviation assets." The hasty air assault is an excellent way for commanders to seize initiative and take the fight to the enemy.

In conclusion, the presence of an aviation LNO at the battalion level during hasty air assault operations fulfills the need for the right staff "team" as commanders strive to control the battlefield using a greater number of assets.

Lieutenant Matthew C. Densmore served as a rifle platoon leader and the S-3 Air operations officer in the 3d Battalion, 187th Infantry, and served as headquarters company executive officer of the UN Command Security Battalion—Joint Security Area, in Korea. He is a 1995 graduate of Texas A&M University.

Electronic Warfare
And the Infantryman

CAPTAIN GREGORY O. BODGE

The education of the infantry soldier generally overlooks the field of electronic warfare. Members of the Military Intelligence and Signal branches have become experts in this field, with only a cursory education on its potential and capabilities being passed on to the Infantry.

With the development of faster, smaller, and more powerful microprocessors and components, the basic elements of electronic warfare have become more powerful and more accessible to more people. Even in the consumer electronics industry, items as basic as cellular and wireless telephones have had to become more sophisticated. They have added digital signal processing and spread spectrum transmissions to prevent eavesdropping and jamming. As the speed of computers increases, the length of time needed to detect a soldier on a radio decreases. Every time an infantryman uses something as basic as a radio without taking specific precautions, he must assume that someone knows where he is and on what frequencies he is transmitting. Therefore, it is vital that any member of the infantry who will use a radio, or any other device designed to transmit electromagnetic waves, know the dangers involved and how to reduce them.

Electronic warfare usually covers three broad areas—electronic sensing (ES), direction finding (DF), and jamming or electronic attack (EA).

Electronic sensing is the ability to determine whether an electromagnetic wave is being transmitted. This is the easiest form of electronic warfare to implement, requiring only an antenna and readily available receivers. The design of a direction-finding system enables a receiver to determine the direction and location of a transmitted signal. DF systems are effective against modern military transmitters, difficult and expensive to create, but rudimentary systems can be built with simple meters and directional antennas. This makes DF less of a threat to infantrymen than ES, but in its fundamental state, it is still an option for many potential enemies. Jamming or EA is the means by which an enemy can prevent the reception of a transmitted signal. It can take on many forms, in a variety of costs and sizes, but generally must be large and expensive, to be effective against modern transmitters.

Electronic sensing devices fall into two categories—signal intelligence and communications intercept. Signal intelligence systems can tell the user if someone is broadcasting, the frequency on which he is broadcasting, and the strength of the broadcast signal. Communications intercept systems allow the user to listen to radio communications. Modern spread spectrum systems and encrypted communications are not easily susceptible to communications intercept systems. This does not mean they are not susceptible to signal intelligence systems. Any transmitted signal, regardless of modulation type, frequency, or content, can be detected if not properly transmitted. With today's processing power, even a short-duration encrypted message can give an enemy valuable information, even though he cannot decipher the message.

Building basic direction finding systems at home is a popular hobby with electronics enthusiasts. These systems generally consist of an antenna, designed to receive in one direction, connected to a power meter. Pointing the antenna at a detected signal indicates the direction of the signal by changes in the power level. The power meter will indicate an increase, and the assumption is that the antenna is pointing at the source. The closer the system gets to the source, the more accurate it is. This one dimensional data will give only an azimuth to the target. Coordinating two or more systems to work a specific signal at the same time can give a location. The more systems that are working the signal, the closer the result will be to the actual transmitter location. Several systems receiving one incorrectly operated platoon radio signal will give the enemy a very accurate fix on the platoon's location, and possibly its movement. This can allow the determination of possible objectives, and even targeting.

Electronic attack systems can deny the enemy the ability to use radios effectively. They can be small, low power, battery operated units, or large, high power, multi-frequency systems. They operate on the theory that a high-power transmitter can distort the transmission of a lower power transmitter on the same frequency. These systems usually transmit noise at a high power and at frequencies known to be in use by enemy forces. A major disadvantage of EA systems is that they are also transmitters and are susceptible to direction finding systems.

Soldiers must take specific precautions to defeat EW systems in the field. With a basic understanding of the way various systems work, common sense

can dictate these precautions. A signal cannot be susceptible to listening, jamming, or direction finding without detection. Because of this, the first priority should go to reducing the enemy's detection of the transmitter. Unfortunately, this can also mean making reception more difficult for the intended receiver. One way to overcome this problem is to use the terrain effectively. It is best to place a large terrain feature between the transmitter and the enemy, with no terrain features between the transmitter and the receiver. While this is not always possible, at least a large hill or mountain can be put between the enemy and the transmitter and a small hill between the transmitter and the receiver. Some of the best transmission sites are valleys and draws, which can usually be found in most terrain. If properly positioned, these features will reduce the transmission strength toward the enemy while allowing transmission to the receiver.

When terrain features are not available or not properly oriented, the use of field expedient directional antennas is a good alternative. These use common materials and designs, and formulas for determining antenna lengths can be found in various field manuals. A directional antenna transmits most of the radio's energy in one direction and limits the transmission in other directions. Pointing the antenna toward the intended receiver allows most of the signal strength to go to the receiver. With this system, enemy EW systems will not receive the full signal strength. The most obvious solution to limiting the reception capabilities of the enemy is to reduce the output power of transmitters and reduce transmission time. Most radios used by infantry units have variable power settings. By using the lowest possible setting while still maintaining required communication, it is less likely that the enemy will detect the radio. Unfortunately, this solution requires a change in signal strength while the radio is moving away from the receiver and in varying terrain. The method most easily implemented is

reduction of time spent on the radio. If the radio operator limits his transmission time, an EW system has a limited time to collect and analyze data. Operators should spend as little time as possible on the radio and transmit only necessary information. These methods make it difficult for an enemy to receive friendly radio traffic.

While the key to keeping enemy EW systems ineffective is to make signals impossible to detect, this is often difficult to do. The next option, then, is to confuse the enemy systems by making detected signals unusable. Again, terrain can play a key role. Radio waves tend to bounce off hills and buildings, creating a phenomenon known as multipath. Multipath describes the arrival of the same signal at the same point at different times and at different signal strengths. This can cause distortion at the receiver and—because many DF systems use the time the signal arrived to determine direction—difficulty in locating the transmitter. This also means it is more difficult to receive and find the direction of a moving system, particularly one that is moving at constantly changing speeds. Unusable signal information is as good as none at all. And if it can occupy an EW system long enough to keep it from detecting other transmitters, it is better.

Upon the detection of a transmitter, an enemy might decide his best course of action is to jam the transmission frequency. If the radio operator or leaders can guess the jammer's direction, the team should try to put a major terrain feature between themselves and the jamming system. Often the protection the terrain feature can afford will allow

clear transmission and reception. The only other option for most units is to change frequencies and take precautions against being detected again. Unfortunately, this often creates confusion throughout the net as operators try to find the new net. Because of these problems and the possibility of disruption, simulated jamming should be incorporated into training whenever possible. If the chain of command is informed of enemy jamming, they can initiate actions to disable the jamming source.

There are times when the mission and the terrain can make it impossible to maintain radio communications without being detected. But even in these instances, it is possible to limit the amount of information that the enemy gathers. Encrypted signals should be used whenever possible to deny the enemy transmitted data. While they will still be able to jam a transmitter or find its direction, they will not know the specifics of the conversation. Retransmission sites will allow operators to transmit at lower power, thus reducing the probability of detection. The high power retransmission site, even if detected by the enemy, will not give him information about specific locations and movements of friendly elements. There are always options to the infantryman for protection from enemy electronic warfare systems.

Some knowledge of electronic warfare systems is vital to mission success. With common sense and precautions, an infantry unit can limit its susceptibility to enemy EW systems, allowing them to complete their missions despite enemy capabilities.

Captain Gregory O. Bodge, when this article was written, was assistant S-3, 54th Troop Command, New Hampshire Army National Guard. He was commissioned from the Massachusetts Military Academy OCS. He gained experience as an electrical engineer supporting Force XXI programs with the 104th Military Intelligence Battalion, 4th Infantry Division. He also served in the 1st Battalion, 104th Infantry, Massachusetts Army National Guard.

Obscurants as a Combat Multiplier

LIEUTENANT COLONEL BILLY WELCH

Combat multipliers are systems that provide an advantage over the enemy when integrated with other combat systems. Two multipliers that most field leaders are familiar with are superior battlefield information and obstacles. Obscurants are also a powerful combat multiplier. Both physical obstacles and obscurants shape the battlefield and deny the enemy access to certain areas, or deny him information.

The sensor capabilities of the U.S. Army exceed those of many forces in the world. We are proud to "own the night." The Army is well equipped with both image intensified (I^2) and thermal sights in large quantities. I^2 sights are so abundantly available that private citizens not only have access to them, but can easily afford them. Any opponent we are likely to face, from a heavy equipped army to the streetfighters in third world areas, is likely to have some sort of I^2 device. When operating in darkness, thermal sensors and I^2 sights are both effective to some extent, but I^2 sights cannot see through fog or man-generated obscurants, and thermal sensors have the advantage.

In order to maintain our overmatch, we must change the conditions when nature does not. One method is to use obscurants to set the stage for our thermal systems. This allows us to see, using thermal sights, while blocking any I^2 night sights. Once we create favorable conditions, our combat leaders can exploit them.

Thermal sights are becoming more and more common, and are now even commercially available in some automobiles. The French, for example, produce some very good thermal sights and have been selling them worldwide.

When an opponent has thermal sights, we can block them with our infrared (IR) obscurants. The IR obscurants prevent the enemy from detecting our forces with his thermal sights and limits his knowledge of the battlefield. Even if we cannot see through the IR obscurant, we can still use it to our advantage—when and where we choose—at the decisive place and time. We can use the obscurant screen, either as a deception or a protective screen, for our forces to deny the enemy knowledge. It was not until the mid 1980s, when M1 tanks and Bradleys were fielded, that thermal viewers became common and we could see through smoke. We can use IR obscurants just as we used visual smoke for the many years when we could not see through it.

Our information dominance complements our obscurant capabilities to in-

> *Any opponent we are likely to face, from a heavy equipped army to the streetfighters in third world areas, is likely to have some sort of I^2 device.*

crease the chance of success on the battlefield. The Army uses unmanned aerial vehicles, helicopters, and remotely placed sensors to gather and to share battlefield awareness among friendly forces. Our forces can be on the near side of the obscurant or inside a protective haze. In this operational environment, we use IR obscurants to block enemy thermal sights and still retain superior battlefield awareness. This can be compared to the Air Force's use of AWACS and sharing situation awareness with the fighting forces even though the fighters cannot "see" the enemy.

Field Manual 5-102, *Countermobility*, defines an obstacle as "any obstruction that stops, delays, or restricts movement or maneuver. Obstacles can exist naturally, such as a river or a cliff, or can be man-made such as a minefield or tank ditch. *Reinforcing* obstacles are placed on the battlefield through military effort and are designed to strengthen the existing terrain to slow, stop, or channel the enemy."

Moving through an obstacle slows a force, making it more vulnerable to targeting systems. Obscurants cause similar effects. Moving in areas of limited visibility slows and isolates a force, just as terrain limits movement and visibility. Think of obscurants as artificial terrain features designed to affect enemy operations. As with any obstacle, we would use our own fighters to overwatch and maintain awareness of the far side and to attack the enemy as they cross or go around the obstacle. And obscurant obstacles are self-clearing and cause no collateral damage.

Although obstacles do not generally affect helicopters, helicopters are a particular threat that obscurants can address. To see past the obscurants, helicopters must climb, go through, or go around, and a helicopter that is not in ground clutter is vulnerable to targeting systems and weapons. Obscurants can also shield our forces from the surveillance sensors on satellites.

The sequence that antitank systems follow when attacking the enemy is *detect*, *identify*, *acquire*, and *engage*. To avoid being engaged, a unit must

interrupt this sequence. Our M1 tanks can withstand a hit from most antitank systems and still survive. But as our vehicle systems are made more deployable, they get lighter by sacrificing armor. Since lighter vehicles cannot afford to be hit, they must avoid being detected or acquired.

All combat vehicle systems are equipped with smoke grenade launchers for rapid obscuration, but smoke grenades do not prevent detection. They allow vehicles to escape by interrupting the engagement process or, in the case of a mobility kill, allow crews to evacuate a vehicle. Only the generator systems prevent detection. Truly stealthy systems are invisible to all sensors—visible, infrared, radar, and acoustic—but we do not yet have such systems today. What we can do is to block sensors. Our obscurant generators can

thwart the many specific frequency ranges that are used by military reconnaissance, surveillance, and target acquisition systems. We can use the mobile capabilities of our generators to protect our combat forces as they advance. These generators can dispense different obscurants to reduce I^2 detection, laser range finders, laser designators, optical systems, or thermal sights, or any combination of these. The United States is the only country that is capable of producing IR obscurants, both on the move and standing still, over small or large areas. We can use our mobile systems just as the Air Force uses specially equipped aircraft called "Wild Weasels" to offer safe entry as they accompany the fighting forces.

The ability to control the environment and set conditions gives the battle commander a distinct advantage. Ob-

scurants can be used to ensure that our forces have the advantage. As always, we must first train with the systems—and in the conditions in which we will fight—so that our units do not fail in combat.

Our current M56 and M58 generators are designed to be as mobile and transportable as the combat forces they support. A task force can move inside the cloud provided by the obscuration platoons. Although this cloud is not like the *Star Trek* Klingon Cloak, it is a major step in that direction.

Lieutenant Colonel Billy Welch has served in various assignments in infantry units acquisition assignments and is currently Product Manager, Obscuration and Decontamination Systems, Soldier and Biological Chemical Command, in Edgewood, Maryland. He is a 1977 ROTC graduate of Oklahoma State University, and holds a master's degree from Boston University.

RShG-1
Russia's Latest Thermobaric Grenade

ADAM GEIBEL

The latest Russian thermobaric grenade—brought out on 23 July 2001 by the Bazalt Research and Production Center—is an improved variant of the RShG-1. Described as a "Multi-Purpose Rocket Propelled Grenade," the weapon has been listed as having an effective range of 500 meters and a

maximum range of 800–1,000 meters. With this revelation, Bazalt may be trying to wring RPG-29 performance levels out of the original RShG-1.

The RShG-1 is based on the RPG-27 LAW (a more powerful evolution of the RPG-26), which fires a 105mm rocket based on the PG-7VR tandem warhead grenade (used in the RPG-7). The PG-7VR warhead, which has a punch equivalent to that of a 120mm high-explosive (HE) mortar or artillery shell, was actually developed in 1988. The Russians now believe it will be a useful antitank weapon out to 2005. (See also "The RPG-7 on the Battlefields of Today and Tomorrow," by Lester W. Grau, *Infantry*, May-August 1998.)
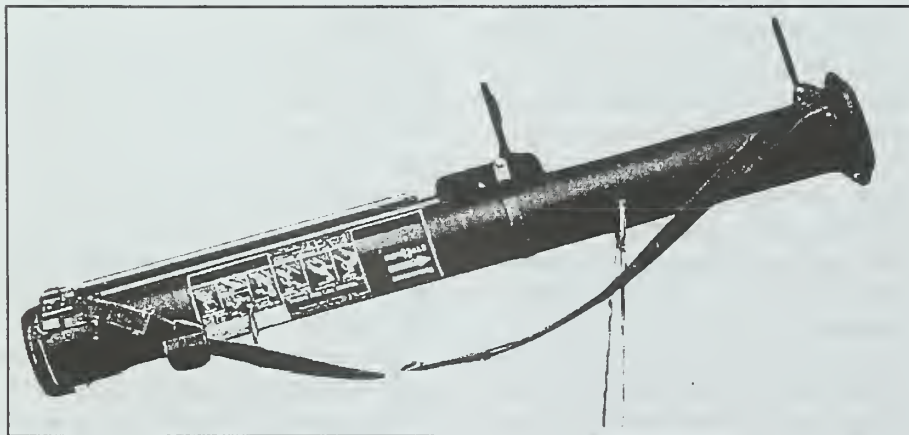
The PG-7VR is also used in the
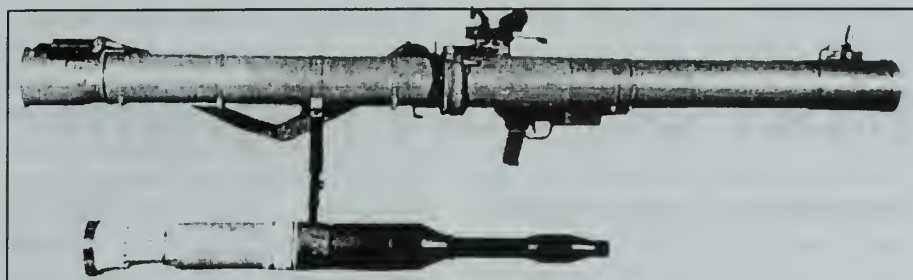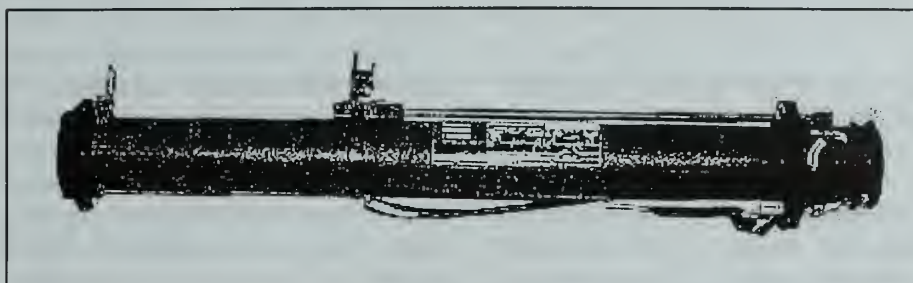

Figure 1. RPG-27

Figure 2. RPG-29

Figure 3. RPG-29

	RPG-27	RPG-29	RShG-1	RShG-1 IMPROVED
Caliber (mm)	105	105	105	105
Wt. total (kg)	7.6/8	11.5	8/8.3	8.5
Wt. (grenade)	--	6.7	--	--
Range (m)	200	500	200	400
Maximum armor penetration (m)				
HRA after ERA penetration (normal)	.750	.750	Unknown	Unknown
Reinforced concrete	1.500	1.500	Unknown	Unknown
Brick	2.000	2.000	Unknown	Unknown
Log and earth	3.700	3.700	Unknown	Unknown
Operating temp (C)	+/– 50	+/– 50	+/– 50	Unknown
Length (??)	1.155	?	1.155	?

The RPG-7 using the advanced 4.5kg, 105mm PG-7VR grenade had a penetration of 650mm of rolled homogenous armor (RHA), the RPG-26 disposable LAW had more than 500mm, while the RPG-29 105mm launcher was able to punch through 750mm.

The Russians concluded that the RPG-29 was by far the most potent weapon among those tested. It was as powerful as the heavy "Kornet" ATGM and, considering the proliferation of this fairly light infantry weapon, they figured that it had become the most dangerous adversary of modern Russian main battle tanks and a very disturbing development.

The RShG-1 has a small HEAT (high-explosive antitank) precursor to penetrate targets before the 2.3kg thermobaric main charge warhead explodes, making it more useful than the RPO-A against lightly armored vehicles and field fortifications. With tandem warheads, the first charge blows a hole in the target's outer skin (or ERA blocks) for a thermobaric primary warhead to pass through. This provides an armor/concrete penetration capability, allowing the thermobaric charge to be detonated inside the target.

Thermobaric weapons contain slow-burning explosive slurries that keep their explosive impulses on a target longer. Their burning plasma clouds can penetrate even the smallest cracks, and when the slurry is completely consumed, the resulting vacuum causes a massive backblast that crushes everything in the area. These weapons can be extremely dangerous to armored vehicles, as they penetrate engine compartments or vents.

Bazalt believes that the RShG-1 has no competitors on the global arms market and, with its excellent sales prospects, may be a weapon U.S. forces must face in the future.

Adam Geibel, a National Guard captain, is S-2 of the 5th Squadron, 117th Cavalry, New Jersey Army National Guard. He previously led a tank platoon in the 3d Battalion, 102d Armor. He is a graduate of Drexel University and was commissioned through the New Jersey Military Academy Officer Candidate School in 1990.

RPG-29, which looks more like a conventional "bazooka" or recoilless rifle than the LAW-series RPGs. The RPG-29 can be broken down into two sub-assemblies carried by the gunner in a special bag. The assistant gunner carries additional grenades and protects the gunner. While fitted with iron sights, the launcher also has both optical day and night sights.

In late 1998, the Russians sold the Syrians a shipment of RPG-29 grenade launchers with night sights (as part of a larger arms package).

On 20 October 1999 the Russians conducted extensive survivability trials on T-80U and T-90 main battle tanks (MBTs). These tests involved firing large amounts of ordnance (including several versions of RPG ATGL, light and heavy ATGMs, and APFSDS rounds) at the frontal arc of T-80Us and T-90s, with and without Kontakt-V reactive armor (ERA). Three of each type tank were used (one with Kontakt-V ERA, one without the explosive packages, and one reserve vehicle). For the ERA part of the trials, knocked-out ERA packages were replaced after each shot. Each weapon was fired five times at each target, for a total of 20 shots per weapon.

The RPG-29 scored a total of three penetrations, while none of the other RPG rounds could penetrate even the stripped target. The RPG-29 also penetrated the T-80U three times with the ERA and all five times without. Of all other grenades, only one PG-7VR penetrated the stripped T-80U target.

Expanding Sniper School Programs

STAFF SERGEANT JEFFREY T. DAVIS

The United States Army Infantry Center has expanded the training capability and student load capacity of the U.S. Army Sniper School at Fort Benning, Georgia. Using the Total Army Training System (TATS) model as a guide, the National Guard Sniper School at Camp Robinson, Arkansas, is now a training institution that will be able to award trained snipers the additional skill identifier (ASI) of B4. Jointly, Regular Army, Army Reserve, and Army National Guard instructors will be able to coach and mentor soldiers, airmen, sailors, and marines in the art and science of sniping.

What does this mean for senior company and battalion commanders in infantry units? The answers begin with the perspective of a joint unit design process that starts at the top of U.S. Army training and combat organization.

This initiative will significantly affect training options for the Army's Training and Doctrine Command (TRADOC), Forces Command (FORSCOM), National Guard Bureau, and Army Reserve units whose missions require sniper-trained personnel. The integration of the professional experience of the active and the reserve components, along with their doctrinal collaboration, will strengthen the Army's sniper program. The accreditation process of the National Guard Sniper School began in January 2000, and the number of classes per year is expected to double to meet the needs of the National Guard. Furthermore, the school will be open to active and reserve component units. After accreditation, the number of classes per year is expected to double in an attempt to meet the needs of the National Guard. Furthermore, the National Guard Sniper School will be open to both active and reserve component units.

Any potential candidate who thinks the Camp Robinson site will have an easier program of instruction should reconsider. For every hour of training conducted at the Fort Benning School, almost two hours of training are being conducted at Camp Robinson.

The time difference between training sites is necessary to maintain performance standards. There is almost a five-day difference between the curricula at the two training sites, with the site in Arkansas managing the same program of instruction in less time. The National Guard Sniper School is more intensive due to the need to comply with Training and Doctrine Command and TATS Regulation standards, which are delineated in the program of instruction approved by the Course Convening Authority. The National Guard Sniper School will be the only sniper school outside of Fort Benning to award a Department of the Army ASI. The reason for this is to ensure that the sniper standards are maintained at a high level of achievement for the sniper candidate.

A sniper graduate can negotiate 300 meters through enemy observed territory, fire two rounds that neutralize enemy targets, and withdraw undetected. This ASI standard is strictly enforced and is the key to enhancing tactical training programs in Infantry units. For this reason, the sniper graduate is a very effective force multiplier in combat and in training the force.

For the infantry commander at company or battalion level who is familiar with the force multiplying capability of a fully trained sniper, with respect to basic and advanced marksmanship, this can be invaluable in development of his training strategy. With the increase of operational tempo, both in and outside the continental United States, and the continued draw-down in material, human, and financial resources the TASS accreditation of the National Guard Sniper School becomes a significant "Force XXI" asset. For the sniper candidate, these assets present an arsenal of knowledge and performance based skills to impart to his fellow soldiers.

Sniper skills can be exploited in company and battalion-level infantry training programs to increase marksmanship readiness. Tactically, sniper assets represent an ideal resource for force protection, neutralization of critical targets, and real-time information gathering, just to name a few practical applications. For the infantry commander, tactical success during enemy contact arguably rests on the accurate and sustained marksmanship capability of his soldiers. The sniper can enhance this capability by aiding the commander with the implementation of "Train the Trainer" programs in the finer points of basic marksmanship as this capability applies to offensive and defensive maneuvers.

The National Guard Sniper School offers experience in "Train the Trainer" programs that translate to sustainment training exercises that increase tactical knowledge and performance. These exercises reinforce the tactical capabilities of snipers, squad leaders, and soldiers through the development of either opportunity or scheduled company training. The areas of training include target detection and selection, small-arms weapon capability and range estimation, advanced movement and camouflage techniques, and finally reconnaissance and information gathering. With regard to these tactical skills, the Fort Benning and Camp Robinson sniper schools train soldiers to a significant degree beyond the basic knowledge and performance standards expected of conventional soldiers. But the Camp Robinson school brings more training experience in the area of sustainment training because of the way the institution must train its sniper candidates.

Among infantry trainers, it is popular to think of performance skills as the only noteworthy measure of combat training, but this may not always be the case. A preliminary study of sustainment exercises conducted by the Directorate of Operations and Training, Training Development Department, in September-October 2000, has suggested that the *knowledge* aspects of such training are more perishable than the *performance* aspects. That is, soldiers will forget the finer points of marksmanship faster than they will lose their ability to perform the basic *tasks* of marksmanship

Given the Infantry's emphasis on psychomotor reinforcement—rehearsals, battle drills, physical fitness—the validity of this observation merits attention. But there is a more interesting suggestion that Infantry trainers should know: For the rifleman or sniper, at the basic or advanced level of marksmanship, *knowledge* reinforcement is a critical factor for *performance* enhancement. Given the current drawdown in training resources and increase in deployment operational tempo, this is a significant observation with meaningful implications for company level infantry training: With the correct approach to information training and transference to performance exercises, training the force will be easier and the knowledge better retained.

A study conducted by the Army Research Institute (ARI) early in 2001 dealt with information training and transference with regard to training effects on sniper performance, using the M24A weapon system. ARI studies on advanced rifle marksmanship have been going on since the 1970s, this was their first look at sniper training. Using a random sample of 108 snipers in competition at Camp Robinson in 2000, an interesting relationship between performance score and a training group was revealed.

The mean scores of (National Guard/Reserve) inexperienced contenders (less than two competitions or two years of experience, informally trained and in civilian jobs unrelated to advanced marksmanship) whose team mates were experienced contenders (more than two competitions and more than two years of sniper experience, and formally trained) were significantly higher than those of inexperienced contenders who did not meet the stated pairing criteria. With a baseline score of 617.00 points (minimum standard of sniper marksmanship skills) the 21 competitors studied had the inexperienced competitors teamed with experienced at m = 742.93 points, n = 15 and the inexperienced group not meeting the criteria at $\underline{m}$ = 537.66.

This 40 percent difference in scoring suggests a strong relationship between inexperienced and experienced pairing regarding sniper marksmanship sustainment training. What does this mean with regard to learning the art of sniping under these competitive conditions? It means that there is a lot of learning going on in the training of sniper skills. It is also evident that these skills will enhance the fundamentals of marksmanship, to a significant degree, in any other marksmanship training.

Infantry commanders and trainers who are looking for better results in tactical training involving snipers, may want to include that knowledge in their mission essential task list (METL) training. The integration of that knowledge into training exercises involving marksmanship, range-card preparation, defense-position construction, and reconnaissance strategies to locate enemy positions will improve the proficiency of soldiers in those areas. Including the expertise of the sniper in the wargaming of platoon and company training preparation will motivate the infantry soldier to learn more about his own craft. Moreover, since planning is learning, it will increase the knowledge base of the trainers involved with constructing more effective and efficient instructional strategies. The result will be higher standards for individual and collective tasks at the squad, company, and battalion levels.

At every level where this training will affect combat effectiveness, the argument evolves from the concept of the sniper trained infantryman as a force multiplier. Infantry soldiers don't have to attend the resident courses of these additional skill programs of instruction to learn how to use these skills to enhance their performance and further master their trade. It is up to the company commander, first sergeant, training NCO, platoon sergeant, and squad leader to use the knowledge of the qualified sniper. His inclusion in training development will make training more effective and efficient before individual and collective tasks are tested at the company field training exercise or battalion ARTEPs.

The relevance of sniper input has

merit when company command abilities are evaluated—namely at major training facilities such as the Joint Readiness Training Center (JRTC) and the Maneuver Training Center (CMTC). Additionally, given the argument of time and cost effectiveness, logic dictates that sustainment training for the sniper is the cornerstone of building a strong foundation for "Train the Trainer" programs that enhance tactical knowledge and performance. The tool is there and it is paid for—it should be applied and adjusted to fit the needs of the unit it serves in the context of integrating and transferring information. A successful integration and transfer of information from the National Guard Sniper Program of Instruction to the gaining proponent units in the National Guard and Reserve has some history that Regular Army could adapt to FORSCOM unit training.

Working with the guidance and direction of Dr. Gene Fober, Troy State University Instructor and Army Research Institute scientist at Fort Benning, I was able to develop and implement an effective survey questionnaire. Although the results of the survey are still being analyzed, two important facts have been determined from the initial case studies: First, 11 states in the National Guard have "Train the Trainer" sniper programs that are both organized and effective. This observation provides a possible model resource for units with sniper personnel in need of a training program. Second, between 1999 and 2000, 12 competitors, six of whom were not sniper school trained, increased their marksmanship skills through competition more than 25 percent (mean score in 1999 was 622.75 and in 2000, 796). The events scored are the same events on which sniper candidates are evaluated for DA school and gaining-unit marksmanship qualifications.

The competition is sponsored by the Marksmanship Training Center, which is the commanding unit for the National Guard Sniper School. The school's staff and sniper instructors design and run the competition, which is the most grueling in the country. This competition is also part of the sustainment process for the National Guard Sniper School. The effectiveness of this process is still being measured and is expected to result in a final study by the middle of Fiscal Year 2002, by the Army Research Institute. But it is already evident that National Guard snipers are mastering the art of training their own U.S. Army snipers.

School candidates, non-B4 qualified, compete in multiple state, regional, and national competitions. In these competitions, they act as sniper observers for the primary sniper in the team and many of them attend or will attend the resident sniper course. The program of instruction is broken into two phases with an average of 9 to 12 months between phases. These candidates spend an average of 14.5 hours a month in individual and unit training, and it is no wonder the graduation rate is significantly above the TRADOC standard of 65 percent. Since 1992 the Marksmanship Training Center (MTC) and NGSS have held these competitions, and the recent case studies suggest that they are critical to the success of the NGSS and the graduates of the school establishing "Train the Trainer" programs. Although these competitions focus on performance, programs are being developed to respond to the need to sustain knowledge skills for sniper sustainment and information transfer initiatives that result from "Train the Trainer" programs.

The MTC is planning to move the National Guard Sniper School program of instruction into the fourth stage of Total Army Training System development—distance learning. With the help of instructional designers, the knowledge aspects of sniper training will be fitted to interactive-multimedia tools (CD-ROM and HTML) to enhance performance. The Professional Education Center, the umbrella organization for the MTC and the NGSS, already has an extensive distance-learning program for non-combat arms education. This initiative will begin some time in early Fiscal Year 2002 with the products being tested later in the same year. Because of the joint nature of the Camp Robinson and Fort Benning sniper communities, this initiative can be evaluated for assimilation into the Regular Army. Design and development of a procedural/conditional training tool is being based on the Course Management Plan information found in the sustainment portion of the document. Testing of the training device will begin in the summer of 2001 as an advanced research project for Troy State University. The device will be ready to present, as a prototype to the National Guard Training Center, by January 2002.

The Force XXI and Army Training XXI programs validate this innovative approach. Although the media for information transfer have not reached FORSCOM soldiers, there is great potential with this National Guard initiative for battalion and company-level training. The potential lies with future lessons learned during the continued development of the Total Army Training System Model for the sniper communities at Fort Benning and Camp Robinson. A potential model for sustainment sniper training exists and should be monitored at levels of infantry command. The merit of such efforts will extend a small but significant quality to training the force in the 21st century.

Staff Sergeant Jeffrey T. Davis is assigned to 1st Battalion, 11th Infantry. He was the project manager and site survey chief for the September to December 2000 accreditation process for the National Guard Sniper School and wrote the course management plan. He is a 1995 graduate of State University of New York at Albany and holds a master's degree in instructional technology.

"Streetfighting"
The Rifle Platoon in MOUT

CAPTAIN JOHN W. KARAGOSIAN

Since the end of World War II, the world's population and conflicts have moved from the rural countryside to modern cities and their suburbs. The U.S. Army has found itself on this new battlefield, and is shifting greater training emphasis to these likely sites of future conflicts. There is no end in sight for the Army's increasing commitment to this role.

For today's infantryman, more training in military operations on urban terrain (MOUT) is conducted at MOUT sites and tire houses than before. One of the most elaborate training events at the Joint Readiness Training Center (JRTC) is the fight in which a brigade combat team attacks to secure a village and return it to host-nation control. This fight, as is so often the case in MOUT, hinges on the ability of rifle squads, platoons, and companies to accomplish their collective tasks. Many rifle platoons at the JRTC are challenged getting from one building to the next.

At platoon level, MOUT can be a short but intense and violent experience that can quickly render the unit combat ineffective. Most casualties do not occur in the buildings themselves; they occur outside while soldiers are crossing between buildings. This article will examine some of the recent trends and propose possible tactics, techniques, and procedures (TTPs) to help a platoon train for future urban operations.

Before examining problems for the rifle platoon, we must first consider the terrain. Buildings provide excellent cover against small arms rounds or concealment that masks sandbagging and other force protection steps taken by the defender. Except for downtown areas of cities, buildings are usually separated by open streets and sidewalks that provide little or no cover for the attacker. On the other hand, excellent fields of fire are available to the defender, although engagement distances are almost always 100 meters or less. Because adjacent buildings are much less than 100 meters apart, seizing a foothold in one of them often requires the suppression or obscuration of several others.

For the defender, winning an urban battle requires making the fight as unfair as possible in the first place. A good way to do this is to defend from buildings that provide cover and concealment for friendly weapons and fields of fire into streets and engagement areas that offer the attacker no cover at all. This setting results in time consuming, deliberate operations that require a high expenditure of ammunition and resources to suppress the enemy. The alternative is the expenditure of soldiers, our most precious resource.

At the platoon level, there are several "fights" we must win to survive in MOUT. For riflemen and team leaders, the fight is to seize a foothold in a given building and clear individual rooms. At squad level, the fight is for a floor or a single small building. The platoon fight revolves around larger buildings and small city blocks. At all levels of this fight we will be crossing open areas and securing footholds.

Fire without movement is indecisive Exposed movement without fire is disastrous. There must be effective fire combined with skillful movement.

George C. Marshall, *Infantry in Battle*

The platoon is the lowest level at which we begin to see enough combat power to assault buildings while still being able to suppress and provide all around security. The fight requires coordination, which is gained through fire control and distribution, sectors of fire, and fire and maneuver tailored to a MOUT environment. For the team leader or squad leader, the fight frequently focuses on close-quarters battle tactics to clear rooms and to assault streets. The squad must have platoon support.

Commonly, however, platoons at home station focus on the fight inside the building. Although they accomplish this part successfully, they often suffer attrition getting to the building in the first place. Most casualties in MOUT take place outside the building, where cover and concealment are least available. At the JRTC village, casualties of 70 percent outside buildings are not uncommon. Yet the high-payoff TTPs for surviving outside are the ones we train on the least. Conversely, when we build MOUT training plans that go only from individual to team and squad level—rarely progressing to the outside fight—we set our junior leaders up for failure. Training on clearing rooms at the expense of entering and moving between buildings does us little good if we don't get into the rooms.

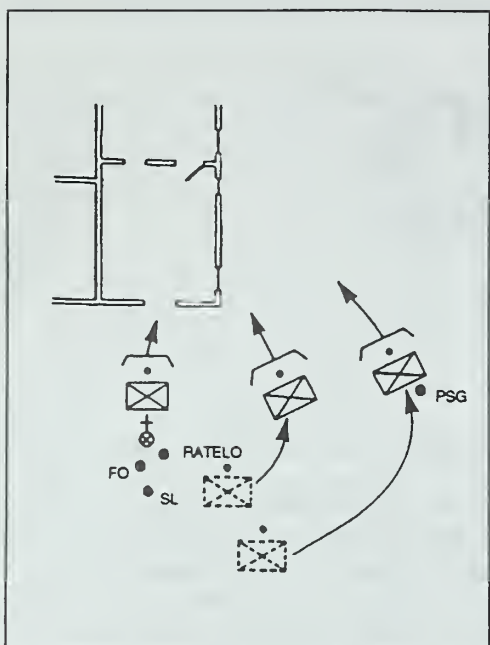Generally speaking, three weapon systems cause almost
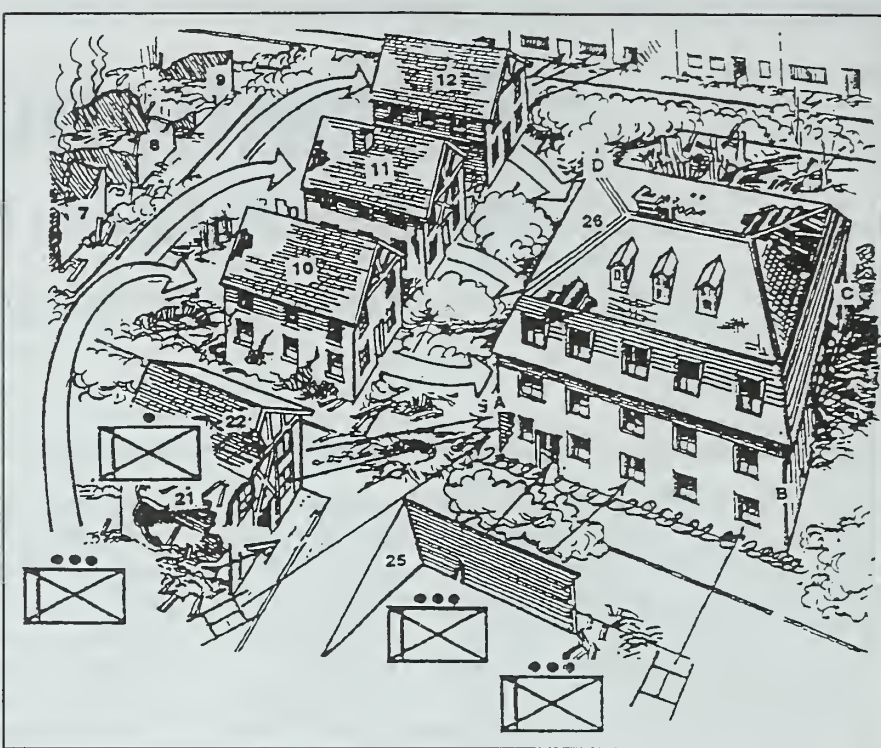
Figure 1. Platoon Attack from ARTEP 7-8 DRILL

Figure 2. Company Attack from FM 90-10-1

all casualties among rotational units in the MOUT attack—mines and booby traps, indirect fire (usually 82mm mortars), and direct fire from small arms. Direct fire, the biggest casualty producer, is commonly caused by the following:

• Direct fire at a soldier clearing a building, or at a stationary soldier inside a friendly held building.

• Enemy soldiers inside a building defending themselves from a friendly assault (friendly troops in the open).

• Enemy soldiers in a building engaging friendly soldiers in the open, while the friendly troops are attacking a different building, or are otherwise unaware of the source of the fire.

The second and third of these situations are the ones that soldiers train on the least. We should not be surprised that these situations result in most of our losses.

Stated another way, up to 75 percent our casualties are hit when they are not clearing or moving inside buildings. To reduce casualties and increase the chances for mission success, we must do the following:

• Avoid areas where casualties are most likely.

• Spend as little time as possible in areas we can't avoid.

• Implement TTPs to better protect the soldiers who are moving through these high-risk areas.

Our vision of the battlefield is part of the problem. Consider Battle Drill Six, *Enter and Clear a Building* (ARTEP 7-8 Drill). The condition for this task states, "The platoon is moving when it receives fire from the enemy *in a building.*" In this example, all elements that are not assaulting are in support-by-fire (SBF) positions, oriented on the objective building (Figure 1). This technique will work if the enemy is in a single, isolated building and does not have mutual support from somewhere else. Any nearby enemy we have not considered could be a real threat to our assault.

Yet in the following example, we see the problem taken a step further. In Figure 2 (taken from FM 90-10-1), we see a company attacking an enemy strongpoint, labeled *Building 26.* Except for one squad in Building 12, all supporting fires (two rifle platoons, a rifle squad, and two tanks) are oriented solely on the objective building from corners D to A to B.

How is this a problem? In the close confines of the MOUT battlefield, an avenue of approach leading to the objective building can almost always be observed from several adjacent structures, which can also be enemy occupied. By focusing fires and observation on the objective building only, we invite destruction from surprise fire delivered by an alert enemy providing mutual support from nearby. We are then slow to react to this new threat, resulting in multiple casualties in the assault teams as they try to create a foothold. Taken to an extreme, it is not uncommon at the JRTC to see a fire team or squad destroyed while assaulting an empty building.

In Figure 3, we see two platoons clearing a street. The enemy is defending three buildings with a reinforced squad. The squad positions offer mutual support, and their sectors of fire include short range, frontal fire between buildings (dashed lines), and flanking and oblique fire from the sides of buildings (thick lines). Note that the defenders on the east side of Building 11 and the west side of Building 23 are masked from the fire of the friendly platoon that "owns" that building. The enemy crossfire refuses to respect our platoon boundaries. As can be seen, a "by the book" technique will probably result in heavy casualties in the open areas west of Buildings 11 and 22.

The purpose of direct and indirect fires is to allow our assault teams and squads to secure a foothold on the objective building. Suppressing the building itself helps this ef-
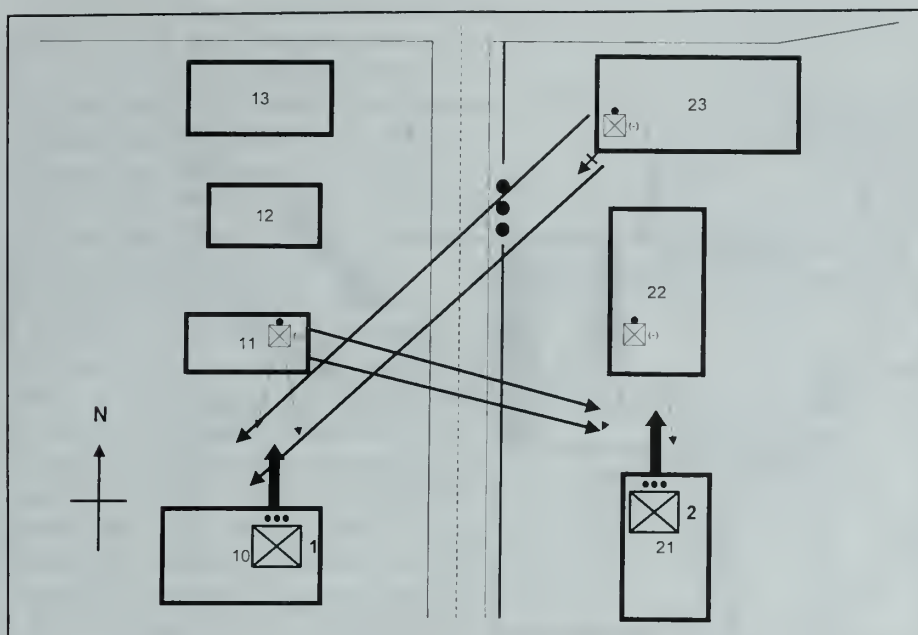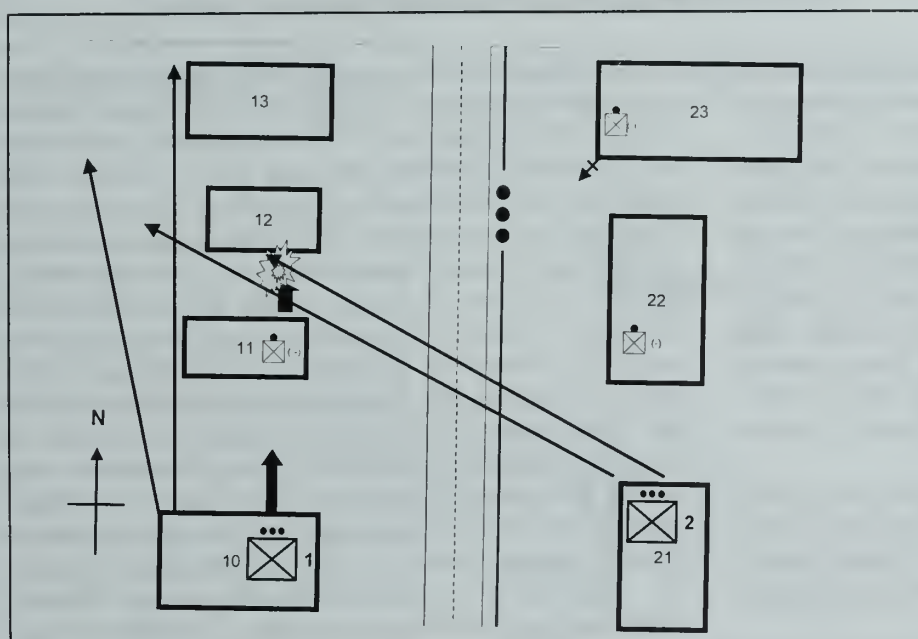
Figure 3. Example of defensive sectors in MOUT.

Figure 4. 1st and 2d platoons isolate Building 11.

• 2d Squad suppresses Building 11 to allow 1st Squad to secure a foothold in the building.

• 3d Squad suppresses Building 11 to allow 1st Squad to secure a foothold in the building.

• Weapons Squad suppresses Building 11 to allow 1st Squad to secure a foothold in the building.

Since most of our casualties in MOUT take place outside the building, however, the decisive point in the fight will be getting the assault squad across the open area. Maneuvering the assault squad to its entry point will probably lead to success. The underlying purpose of our fires and suppression should be less on just engaging the objective and more on protecting friendly forces crossing the street, an open area, or a gap between buildings. This requires good fire distribution. We want, in the end, to mass the effects of our fires. Twenty soldiers suppressing two soldiers in one building is not massing the fire effects. Twenty soldiers simultaneously suppressing ten soldiers in three buildings is massing fire effects. (We'll look at how to do this later.)

Let's focus on the route to the objective and on protecting the route from enemy fire. At platoon level, there are three steps to a deliberate attack in MOUT:

Isolating the building. Isolation is defined in FM 90-10-1 as "seizing terrain that dominates the area so the enemy cannot supply or reinforce the defenders."

There are two ways to isolate a building. We can do it by completely surrounding the building, or we can do it with fire. Fire is easier, faster, and far more common. By advancing to the flanks of the building, we can use interlocking fire to prevent the enemy from reinforcing or retreating. If we don't do this, the enemy can easily reinforce the building under attack, or withdraw and fight another day if threatened.

Isolation is very important if we are to use second-story entry techniques and fight from the top down. Isolating the objective allows us to use the terrain to our advantage. We push the defender out of his building—where he has both cover and concealment—into the open where he has neither and can easily be destroyed. This requires good adjacent unit coordination and cross-talk. In limited visibility operations, we must use our night-vision goggles and weapon sights to their full capability. The night, which makes it easy

fort. The adjacent enemy buildings may also have to be suppressed. At the close engagement ranges so common to MOUT, unseen and unengaged enemy can unhinge our plan.

Fire control is very important here. If we leaders don't control our soldiers' fires, they will direct their fires in one of several possible ways: at the closest target, at the most obvious target (the one whose muzzle flash they see clearly), or into areas around them where fire seems to be directed. The result is tunnel vision, which makes the unseen flanking fire from Buildings 11 and 23 so dangerous.

Let's look at 1st Platoon and the assault on Building 11. A common set of task and purpose statements used at the JRTC follows this type of instruction:

• 1st Squad (main effort) secures foothold in Building 11 to allow the platoon to secure the building.

for us to approach and gain entry, also makes it easier for the enemy to escape (Figure 4).

Mortars are another way to isolate a building with fire. Close-in fires can prevent the enemy from moving in and around the objective. We will still have to secure a position that allows us to observe the rear of the building to provide observed fires. Otherwise, we will need enough ammunition to fire continuously and should plan accordingly.

Securing a foothold. First, we must identify where we want the foothold to be. We do this by designating the entry point for the building. Next, we must identify the route from our last covered and concealed, or assault, position to the building. This is usually the shortest distance, immediately across the adjacent street, back yard, or alley. At this critical point, we must ask ourselves,

Figure 5. 1st Platoon protects the avenue of approach to Building 11.

"From what enemy-held buildings can the enemy observe our avenue of approach?" We must then orient observation and fires on those points to break the mutual support between enemy positions. One of the most common situations that results in casualties at the JRTC village is that of a soldier hit by enfilade fire from a building adjacent to the one he is assaulting that is not covered by friendly fire. The enemy will not advertise his positions to us, but will hold his fire to draw us into the open. If adjacent buildings offer fields of fire to our assault route, we must be prepared to cover them with observation and fire. Being able to predict suspected enemy positions by reading the terrain is an important skill to develop.

If we look at our avenue of approach to the entry point from the enemy's perspective, we can determine which buildings and suspected positions pose the greatest threat. We then assign sectors of fire that direct friendly shooters to the enemy-held buildings identified.

Remember that the purpose behind assigning these sectors of fire is to allow the assault team to get that foothold of a room in a building. We have to suppress the building *and* protect the soldiers along the avenue of approach (crossing the street or open area). There will be many other buildings within 100 meters of ours and the one we are assaulting. These buildings may offer great vantage points not covered by adjacent platoons. The narrow sectors of fire that result from hiding in the recesses of a window or shooting through a loophole mean nearby elements may not be of much help. We must pay special attention to multi-story buildings that offer good vantage points for snipers and forward observers. These are especially valuable to the defenders and are likely to house enemy in force.

This planning takes time—identifying the enemy buildings, designating sectors of fire, and making sure everyone understands the plan. Ideally, for a deliberate attack, we can
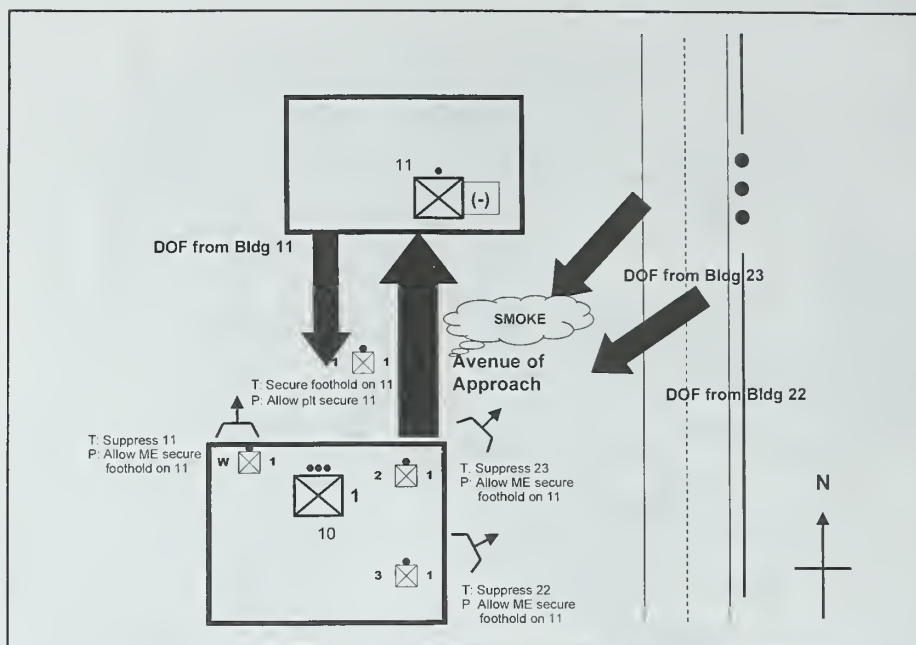
do this planning while conducting troop leading procedures in our assembly area. If we don't, we will have to do it under fire. Moving across an open area to assault a building is one of the most dangerous actions in MOUT. In this case, remember the "slow-fast-slow" sequence: *slow, detailed planning* with dissemination of the plan to squad and team leaders; *fast movement* across enemy kill zones (supported by fire), and *slow, thorough clearing* of the enemy-held building. It is better to spend the necessary time while covered and concealed in a friendly building than out in the street. A thorough plan disseminated while the platoon is in the relative safety of a building will enable the soldiers to cross the gap faster. A hasty plan poorly disseminated will not set the conditions for success, but it will result in excess time in the open, casualties, and possible mission failure. Another platoon or squad will have to clear our building for us, which will take more time than doing it right the first time. Looking at the example in Figure 5, a different set of tasks and purposes would be the following:

• 1st Squad (main effort) secures foothold in Building 11 to allow platoon to secure the building.

• 2d Squad suppresses Building 23 to allow 1st Squad to secure foothold in that building.

• 3d Squad suppresses Building 22 to allow 1st squad to secure foothold in Building 11.

• Weapons Squad suppresses Building 11 to allow 1st Squad to secure foothold in Building 11.

Breaching obstacles. In breaching, there are two types of obstacles we might face, existing and reinforcing. At platoon level, the most common types are mined wire obstacles employed by the enemy outside the building—the doorway, window, or wall we must pass through to seize the foothold itself.

When the rules of engagement permit, the best way to enter is to make our own hole through the wall. Next best is

a window, with a door being the least desired. If the friendly and enemy-held buildings are adjoining, "mouse-holing" with demolitions is preferable. If the buildings are *not* adjoining, we should use AT4s, light antiarmor weapons (LAWs), or other munitions from the safety of our own building, instead of going into the open to emplace explosives by hand. An effective technique, and one used by the Chechens in Grozny in 1994, is to task organize "rocket teams" under a noncommissioned officer. Using the *pair* or *volley* technique, we can make a breach rapidly and give the enemy the least possible warning. Hollow charge weapons in general are not designed to breach walls, and one may not be enough. High explosive warheads—such as those in the AT8, the shoulder-launched, multipurpose assault weapon (SMAW), and the Carl Gustav—are better able to breach masonry. Main gun rounds from tanks are very effective.

Our casualties in the assault itself will be proportional to the intensity of enemy fire, its accuracy, and the time the assault teams are exposed to enemy fire. Suppressive fire and smoke together minimize the intensity and the accuracy of enemy fire. The breaching fundamentals *suppress*, *obscure*, *secure*, *reduce* (SOSR) will help here: Smoke grenades draw fire, and we can expect the enemy, as a minimum, to shoot blindly into the smoke cloud. Speed of movement and breaching minimize exposure times. Assault teams must move fast and stay dispersed. If possible, they should not stack outside the entry point, but get inside as quickly as possible (Figure 6).

Clearing the building (FM 90-10-1). Once we have seized a foothold in our building, the tactical problem for the defender changes. If the enemy's morale is low or he is willing to trade space for time, he may elect to withdraw and take up the fight again on the other side of the next street or a suitable clear field of fire. But if the enemy regards the building as key terrain and is willing to fight for it, the fight doesn't end until the enemy is destroyed in the building. The defenders inside will shift their attention away from our SBF positions across the street and toward our assault force as it clears from room to room.

On the other hand, defenders of adjacent buildings now know where our entry point is, if they can see it. Follow-on
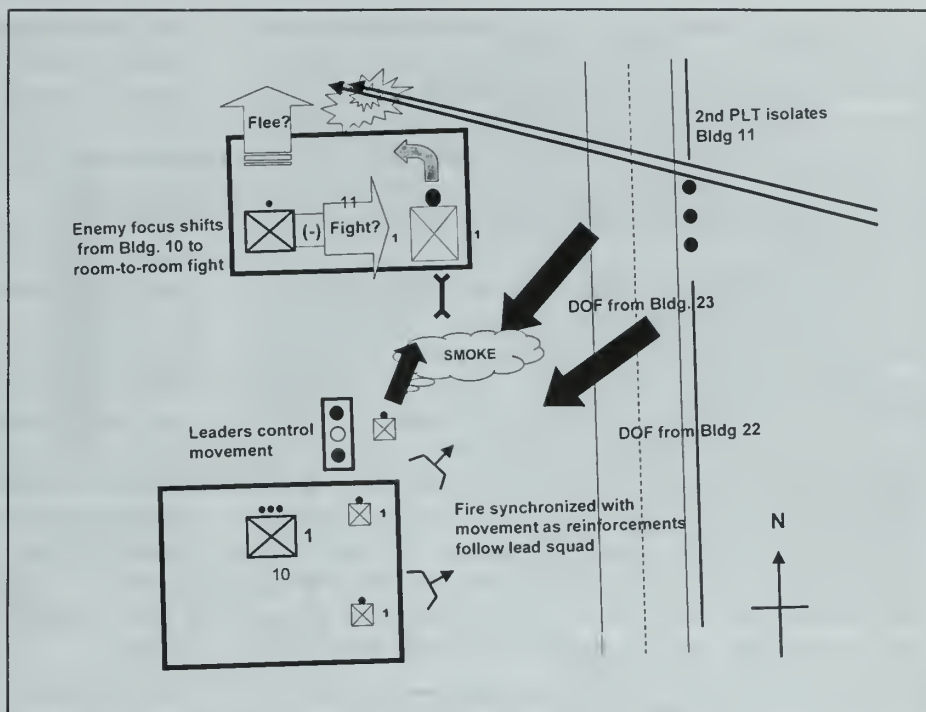
Figure 6. 1st platoon clears Building 11.
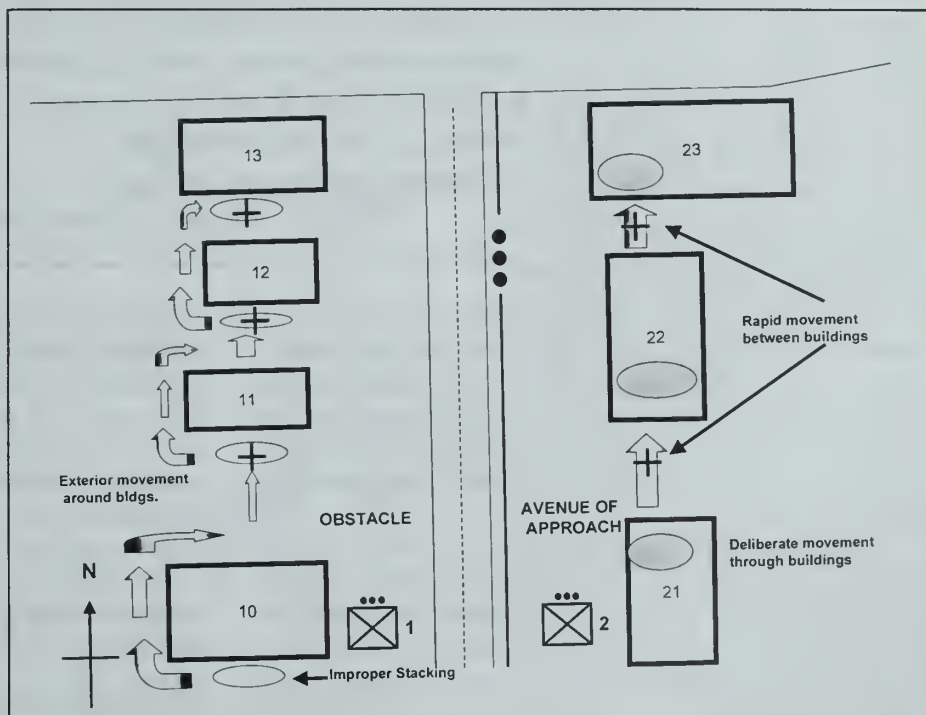
Figure 7. Use of buildings as obstacles and as avenues of approach.

assault teams "run the gauntlet" to reinforce the foothold. There must be a plan for the follow-on teams to enter the building, and a senior leader in the platoon should play "traffic cop" to maintain intervals and dispersion. Fires from SBF positions should shift off the building, but still must focus on identifying and suppressing the enemy and protecting friendly reinforcements. Elements isolating the objective have a difficult task as well and must be prepared for brief sightings of fleeting targets as the enemy makes his escape.

Some shooters should stay oriented on the building until it is completely secured. While many platoons have standing operating procedures (SOPs) that require them to mark every window and door, this never happens in reality. In the heat of battle, room-clearing teams have other things to do. Cleared floors and buildings must be marked, but we should not have an unrealistic expectation of what our clearing team will accomplish.

Moving in MOUT. Many units have proved adept at clearing rooms using the *stack* technique. Correctly employed, stacks allow us to dominate a room with overwhelming firepower in a short time. While room-clearing techniques are outside the scope of this article, one by-product of this one is that leaders like to stack outside on the friendly side of the building so they will have better control of their soldiers. The reasoning seems to be that reduced dispersion is all right, because all distances are compressed in urban operations, but there is a fine line between stacking and bunching up. It is not uncommon at the JRTC to see five to ten soldiers stacked behind every friendly held building when perfectly good cover and concealment are available on the other side of the very wall they're leaning against. This makes soldiers extremely vulnerable to snipers and to airbursts from 82mm mortar fires. Platoon and company command posts, reserve squads, and casualty collection points are some of the biggest offenders. Good forward observers are aware of this trend and will act accordingly. Because buildings offer cover and concealment from enemy fire and observation, they are the best avenue of approach through a city. Stacking outside buildings and moving around exterior walls offer speed, but we put soldiers at risk when we think of buildings only as obstacles to our movement. Remember: If you're doing nothing, don't do it outside.

One technique that can greatly affect our ability to defeat the enemy in MOUT is to enter on the second floor, or fight from the top down. One of the best examples of this was on 20 September 1944, in Nijmegen, Holland. The 505th Parachute Infantry Regiment, fighting to seize the southern edge of a critical bridge across the Waal River, was faced with dug-in, resolute SS troops, determined to contest every room and building in the Hutier Park area and bridge approaches. Many of the multi-story buildings were adjoining, paralleling the streets leading to the bridge. As a result, the paratroopers were able to fight along the rooftops, entering through the uppermost floors and fighting downward to clear the buildings methodically in succession.

North Vietnamese Army (NVA) defenders in Hue, South Vietnam, used different techniques when the 5th Marine Regiment fought to take back the city in February 1968. In the Citadel, an ancient enclosed fortification, the NVA sought to inflict maximum U.S. casualties but realized that they would eventually be forced to withdraw. The 1st Battalion, 5th Marines, attacked to the south, crossing a series of residential streets running east-west, which were labeled, Phase Lines Green, Brown, and so on. The NVA established primary and alternate defensive lines on the south side of these streets.

The marines had to resort to overwhelming firepower to achieve footholds on the enemy-held side of these engagement areas. These footholds invariably started on the ground floors, but once a foothold was established, the NVA refused to fight room by room but quickly withdrew to set up a new defensive line one block to the south. In this case, trading space for a new engagement area was more important to the NVA than losing soldiers trying to prolong the defense of a particular room or building. Marines from the nearby 2d Battalion reported a similar situation. In an assault on the Treasury Building, it took several days to cross the street and establish a foothold, but once they were across, resistance quickly collapsed and the defenders withdrew to alternate positions.

What lessons can we learn from these battles?

The chief advantage of clearing "top down" is that it forces the enemy down to the ground floor and out into the open instead of trapping him on an upper floor where he has no alternative but to make a last stand. The chief drawback to second-story techniques is that they are time-consuming, increase the time soldiers must spend in the open when buildings do not adjoin, and force us to use ladders or grapnels.

Speed in getting inside a building may take precedence over entry onto an upper-level floor. If the enemy can observe our entry point, obviously, assault teams will become extremely vulnerable. Clearing "top down" requires detailed coordination, and we must be able to secure the entry point from enemy fire.

An important consideration is the enemy mindset. If we enter the building, will he stand and fight to the death, or break contact and withdraw? If the enemy will break contact anyway, the risk involved outside in scaling the building may offset the potential gains. An irregular or guerrilla force in urban fighting may not behave like a regular army unit defending a piece of key terrain.

In training where the multiple integrated laser engagement system (MILES) is used by both sides, fighting to the last man in the last room is commonplace. But this will be far less likely against a real foe, especially in larger cities that offer dozens of alternate defensive lines. In our defensive training, we practice moving to alternate and supplementary positions if the primary positions become untenable. We should not assume that an enemy soldier will act like an E-type silhouette at the local tire house and passively accept destruction at the hands of our clearing teams. He probably

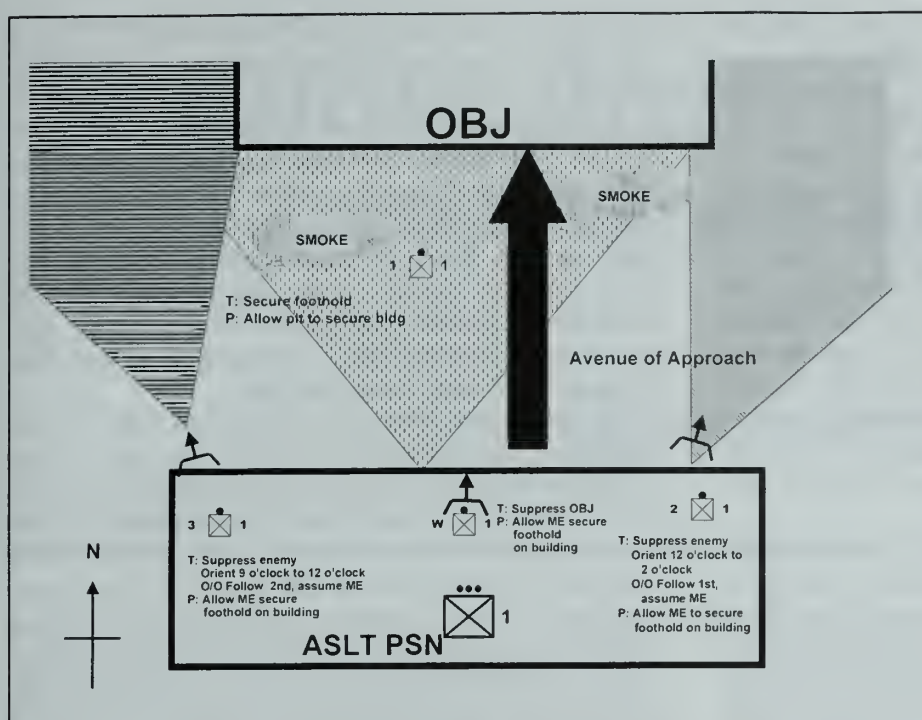> *Maneuvers that are possible and dispositions that are essential are indelibly written on the ground. Badly off, indeed, is the leader who is unable to read this writing. His lot must inevitably be of blunder, defeat, and disaster.*
> **George C. Marshall,** *Infantry in Battle*

Figure 8. 1st platoon contingency planning—hasty attack

Within Figure 8:
- OBJ
- SMOKE
- SMOKE
- T: Secure foothold
  P: Allow plt to secure bldg
- Avenue of Approach
- N
- 3 ⊠ 1
- T: Suppress enemy
  Orient 9 o'clock to 12 o'clock
  O/O Follow 2nd, assume ME
  P: Allow ME secure
  foothold on building
- W ⊠ 1
- T: Suppress OBJ
  P: Allow ME secure
  foothold
  on building
- 2 ⊠ 1
- T: Suppress enemy
  Orient 12 o'clock to
  2 o'clock
  O/O Follow 1st,
  assume ME
  P: Allow ME to secure
  foothold on building
- ⊠ 1
- ASLT PSN

Figure 9. Situational Awareness

Within Figure 9:
- 13 OBJ ROCK
- 23
- PL WHITE
- PL WHITE
- 12
- 22
- 11 ⊠ (+)
- PL RED
- PL RED
- N
- W ⊠ 2 ⊠ 2
- 21
- ⊠ 1
- 10
- ⊠ 3

seek a foothold at ground level is best made by the man on the spot, and on the basis of the circumstances.

Maintaining flexibility. At the JRTC, it is common to see platoon leaders receive a mission to secure a certain building as part of the company mission. They spend most of their planning time on a set-piece, deliberate attack, identifying SBF positions and breach points and task organizing appropriately. On the objective, one of two things almost always happens:

• A friendly unit has been rendered combat ineffective and fails to secure its objective. As a result, the platoon must conduct a hasty attack to secure one or more buildings on the way to its objective.

• The platoon secures its objective and—due to friendly casualties elsewhere—receives a follow-on mission to continue the attack.

Usually these additional missions come as a surprise. Common problems on the objective include hasty reconnaissance and failure to read the urban terrain. These hasty plans frequently result in tunnel vision. Fires are oriented almost exclusively on the building to be assaulted. As a result, rifle platoons are more likely to become disoriented and increasingly vulnerable to fires from unexpected directions.

Regardless of the objective building assigned, leaders should conduct contingency planning to include a hasty attack on a building other than the assigned objective. Rehearsals should include assigning sectors of fire, using suppression and obscuration to protect the avenue of approach to the objective, and designating entry points, breaching techniques, and marking. Battalion scouts will not be able to identify every obstacle, and the platoon should always be prepared to conduct an in-stride or assault breach.

When possible, contingency tasks for the squads should mirror the tasks assigned for the original objective. In Figure 8 for example, squads are assigned sectors of fire and tasks for the assault that generally mirror the plan for the original assault on Building 11, thus minimizing confusion. This is not intended to create a "cookie cutter" effect, but to increase security. Whenever possible, we must refine the plan on the basis of the enemy situation, the terrain of nearby buildings, and reports of which buildings are known to be occupied by friendly or enemy troops.
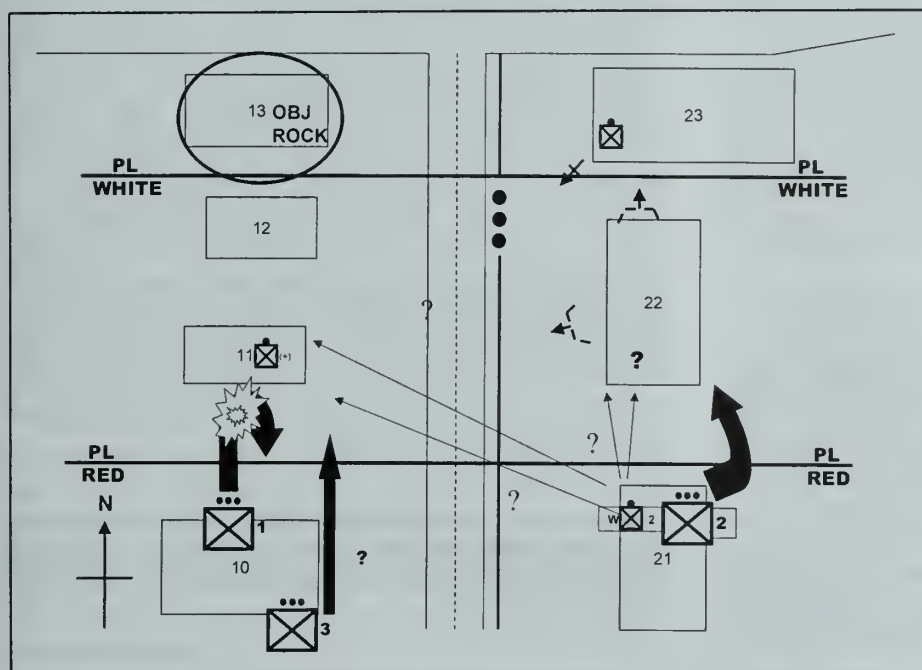
will not defend someone else's living room or kitchen to the bitter end if he can run out the back and put some open ground behind him.

Another consideration is the makeup of the building itself. In Nijmegen, downtown buildings were so close together that U.S. paratroopers could leap from one rooftop to another. If we are trying to fight top down and drive the enemy out into the street, we should take the time to cover enemy withdrawal routes with fire to prevent them from escaping to set up a new defense. There are advantages and disadvantages to both methods. The decision on whether or not to

Maintaining situational awareness. The enemy will not advertise his presence; we will get a true picture of his dispositions and intent only after making contact. Because of the close engagement distances common in MOUT, hidden enemy can inflict severe losses in a short time. If leaders are not aware of what is happening around them, the attack is likely to be overcome by events. A frequent situation is for a platoon or company to be given a "follow-on" mission to pass through a unit in contact and continue the attack to an intermediate or final objective. The follow-on unit is briefed on what buildings will be secured as part of setting the condition for their attack. The enemy, unfortunately, doesn't follow the plan. If the conditions are not set and the follow-on unit is not aware of what is happening, fire is received from buildings on which SBF elements are not oriented. The results are grim.

Let's look at the example in Figure 9: The company commander has directed 1st and 2d Platoons to attack in sector. To provide control, he has designated two phase lines, Red and White. Neither platoon is allowed to cross its phase line without permission. The 3d Platoon will follow 1st Platoon and, on order, assume the main effort and seize the company objective, Building 13. The company commander sees the order of attack as Building 11-22-12-13-23.

Unfortunately, the plan goes awry. 1st Platoon is engaged by a reinforced squad in Building 11 and a squad with a machinegun firing from Building 23. Casualties mount, and 1st Platoon is rendered combat ineffective. Building 22, on the other hand, appears to be lightly held. 2d Platoon is directed to secure 22 and suppress the enemy in 23 and 11. 3d Platoon is directed to renew the assault on 11 after 2d Platoon attacks.

The use of phase lines in this example represents a way to keep one platoon from outdistancing the other. It is difficult to advance down one side of the street without securing both. In this example, two platoons bounding side by side provide security to each other's flanks. Notice also that moving with the grain, parallel to the street from building to building, is safer than crossing the street, or moving across the grain.

In this case the 2d Platoon leader has a decision to make. Originally, he did not plan on having to suppress the enemy in 11, because that building should have been cleared by 1st Platoon before he jumped off. If 2d Platoon does not reori-ent at least some of its fires onto the east side of 11, the result could be disastrous. It may require both 3d and 2d Platoons to gain the fire superiority necessary to advance to 22, or 3d Platoon may have to attack 11 a second time. In any case, if 2d Platoon is not maintaining good communication and situational awareness, the soldiers will be in deep trouble if the enemy in Building 11 reorients to the east. Building 22 itself may not require as much suppression as 11, even though 22 is the objective of the platoon attack. It is not uncommon to see one failed platoon attack adversely affect several other platoons nearby, especially if all concerned continue blindly along the original path.

The 3d Platoon leader has decisions to make as well. Building 13 does not resemble 11 or 12. The platoon takes up firing positions in the rooms on the north side of Building 10, while the platoon leader tries to find someone in 1st Platoon to update him on the situation. It will take some time to come up with a new plan; by the time 3d Platoon secures Building 12, it is at 50 percent strength and must reorganize because the original assault squad has taken heavy casualties.

Urban operations are complex. Effective combat units are able to identify the high-payoff tasks required to accomplish their mission, establish solid SOPs, and train to standard. Movement between buildings is where most of the casualties occur in the JRTC village. This problem is a direct result of a lack of understanding of the nature of MOUT and lack of training emphasis on the specific collective tasks required. Units that emphasize movement between buildings, and achieve a level of proficiency at this task, will be attacking the source of the single greatest cause of casualties in MOUT. To do this, we must understand how the enemy fights, focus on the relationship between fire and movement in cities, and maintain continuous security as well as a sense of tempo and tactical patience. If we succeed here, we will be able to reduce casualties and set up our squads for success as they close with the enemy. We will then be well on our way to accomplishing our mission.

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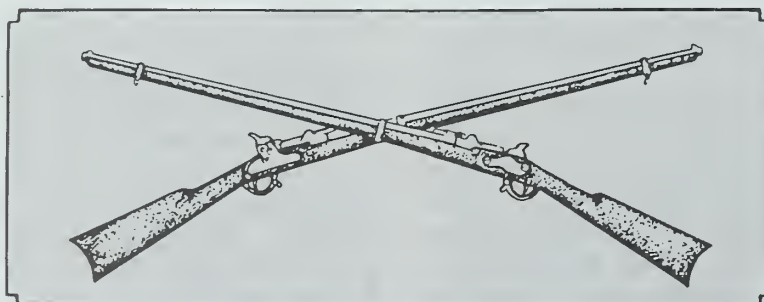
Security Area Concepts
At Battalion and Brigade

LIEUTENANT COLONEL JACK E. MUNDSTOCK

Security area operations are critical to the success of any defensive battle. The tempo of operations and the probability of success are all tied up in the conduct of the security area battle. Too often, commanders and their staffs see the security area as a relatively unimportant part of the defensive fight. In most battles, however, the security area fights alone may determine the outcome or, at the very least, directly affect success. Although this article discusses security area concepts primarily at the brigade and battalion level, applications for these ideas can be found at all levels.

In a broad sense, the responsibilities of the security area can be summarized in four words: *disrupt*, *delay*, *deceive*, and *destroy*.

The *disrupt* function is primarily to keep the enemy off his timeline; for example, prevent him from accurately locating defensive positions or setting his artillery in the most advantageous positions to support his attack.

The *delay* function is tied to the doctrinal definition in Field Manual (FM) 101-5-1, *Operational Terms and Symbols*, but I do not mean to imply that every security area has a delay mission. Regardless of the mission assigned to the security area, the result must be to slow the enemy enough to apply effective fires to his formations and to allow the higher commander to reposition reserves or MBA forces to counter the enemy attack.

The *deceive* function is one that has been the purpose of security forces throughout history. The security area should keep the enemy guessing about where the MBA begins and perhaps cause him to deploy into assault formations earlier than planned. The security area should also reinforce the tactical concept of the MBA, making it more effective. Specifically, this means that if the commander's intent is to fight the enemy in one particular portion of his sector, then the security area should begin the process of influencing the enemy to go to that place.

The *destroy* function is also necessary to the success of the security area. No matter what mission is assigned to the security force, it will destroy some portion of the enemy and it must do so in a fashion that allows the security unit to re-main combat effective. Destroying a platoon-sized element will require a company team; destroying a company sized unit will require a battalion task force. Even in a *screen* mission for a battalion, the security force will probably be tasked to destroy individual vehicles or observation posts (OPs).

The term *destroy* has different meanings in different military communities, and the commander must ensure that his subordinates understand what he wants them to do. Any tactical tasking involving the term "destroy" should have exact numbers or percentages associated. The lack of this guidance is sure to create ambiguity.

Battalions and brigades will conduct primarily *screen* or *guard* missions. The third option, the *cover* mission, is normally conducted by an armored cavalry regiment, an entire brigade, or possibly a heavily reinforced cavalry squadron. The other possible security mission is *area* security, which again is not normally conducted by a brigade or battalion. The commander will determine the form of security to be conducted, on the basis of a number of factors. A screen may be the choice when there is a shortage of time, there are limited avenues of approach for the enemy, or the commander wants to retain most of his combat power for the MBA fight. The *guard* mission may be the choice if there are multiple avenues of approach and enough time to execute a detailed obstacle plan, and if the commander has enough combat power to commit a sizable portion of it to the security area. These choices will be discussed in more detail.

Counterreconnaissance is not a mission; it is one of the results of a security operation. In almost every case, the security area has to do more than defeat the enemy reconnaissance elements. In the most basic form of security—the screen—the security force must maintain contact with the enemy's forward security element (FSE), which is not a reconnaissance asset. There is no doubt that destroying or reducing the enemy reconnaissance assets is an important task, but opposing force (OPFOR) doctrine directs that lost reconnaissance elements be reconstituted and that the security area do more to ensure the success of the defense. Generally, it is a mistake to concentrate solely on the enemy reconnaissance

elements and neglect the rest of the oncoming enemy force.

The *screen* and *guard* definitions include a list of critical tasks to be performed. The commander and his staff must ensure that the unit conducting the security area mission understands which of these tasks it is required to execute. Missions that are as potentially broad as security area missions can be, must be focused so those subordinate units can concentrate on exactly what the commander wants to have accomplished.

Intelligence

The key areas of intelligence are that the staff must have developed solid enemy situational templates and event templates as part of the general intelligence preparation of the battlefield (IPB) process. The situational template shows the predicted echelonment of the entire enemy force and may show possible task organization for subordinate units. The event template or predicted enemy timeline shows when each enemy element could reach a designated phase line, usually the forward edge of the battle area (FEBA). These products are doubly crucial in that a staff could not have conducted an adequate war game without them and needs them for conducting the defensive mission.

The commander and his entire staff, not just the S-2, must have a working knowledge of enemy doctrine and use that knowledge to trigger necessary responses. As an example, the OPFOR that we train against usually employs an FSE as a lead element for its main attack. When the FSE is identified in the security area, this should be an event that the staff is looking for, and should probably initiate a series of responses from the commander to alter the configuration of the MBA.

Command and Control

The command and control and maneuver battlefield operating systems (BOSs) tend to blur at times, and even people who often deal with the terms have some difficulty distinguishing between them. This section will address both the maneuver and the command and control aspects of the security area missions.

Once the commander has chosen the form of security he wants to conduct, a decision must be made as to whether the security area will be under his control or delegated to a subordinate formation. There are advantages and disadvantages to having the security area as a higher level responsibility—that is, under the control of whatever headquarters, battalion, or brigade is conducting the defense. Centralized control allows a more focused application of fires and obstacles, as examples, but gives that commander one more sector or unit to command directly. An example of maintaining centralized control would be to have two units defending in the MBA and a third unit forward in the security area. This forward unit has a follow-on mission to be the reserve or to defend in depth from a subsequent position after battle hand-off with the MBA (Figure 1), one up and two back, transitioning to two up and one back. A unit defending in the classic two up and one back (Figure 2) could split the security area responsibility between the two forward elements, extending their sectors to the forward line of own troops (FLOT). A considerable advantage to this method is that battle hand-off would be between units of the same battalion, which should make it smoother.

Splitting the responsibility for the security area can result in two different approaches to what should be a unified vision. Generally speaking, the best results are achieved with a centralized security area, conducting a guard mission with adequate combat power. This does not mean that units should never do a screen. The primary problems with the screen mission are that commanders and their staffs do not give the security force a clear mission and adequate resources. This is caused by a failure to analyze exactly what it is that they want the screening force to do and give guidance to their subordinates.

An example of a tasking to a company team conducting a screen is, "Team A conducts a screen from phase line Alpha to phase line Bravo to destroy (100%) division reconnaissance and brigade reconnaissance; attrit by one-third the combat reconnaissance patrols (CRPs); maintain contact with the FSE; on order, conduct battle hand-off with the MBA and move to battle position (BP) Dog to become the task force reserve." With a little refinement, this could be the mission statement for that unit. It is obvious that this is a very complex tasking and will need a good company commander to execute. The key point is that commanders have to recognize the complexity
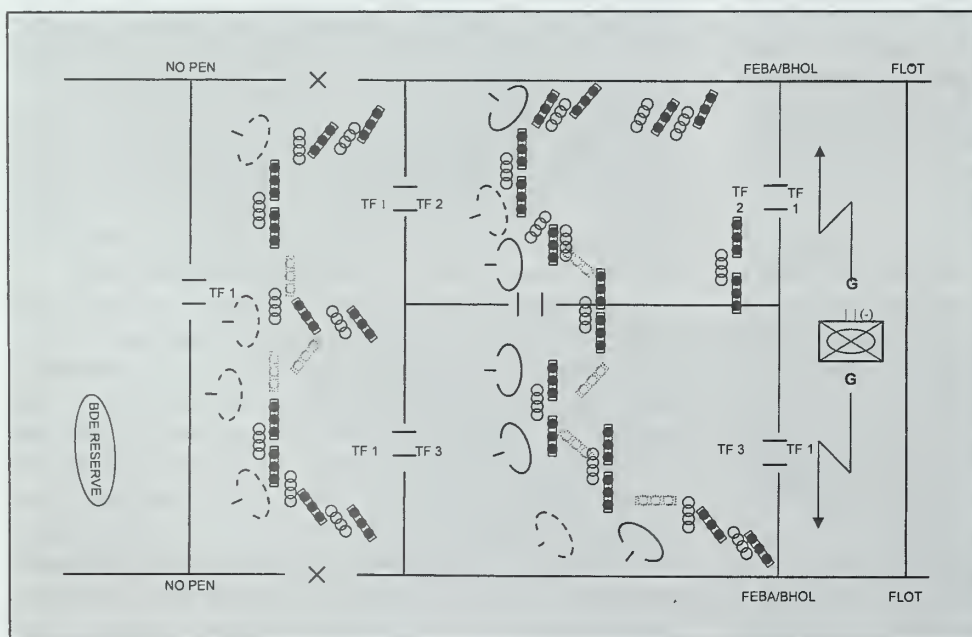

Figure 1

and ensure that this unit has the force resources to conduct the mission.

An example of a tasking to a guard is, "TF 1-999(–) conducts a guard from phase line Alpha to phase line Bravo, to destroy (100%) the division reconnaissance and brigade reconnaissance, CRPs; destroy (by 75%) the FSE; attrit by one-third the advance guard main body (AGMB); on order, conduct battle hand-over with TF 1-998 and TF 1-997, move to BP Red to defend in depth in the brigade sector." Obviously, a lot is going on here, and it may be too much for one unit to execute. A guard force with the ability to execute these tasks would have given the commander the opportunity to reposition MBA forces or create situational obstacles, as the enemy scheme of maneuver would be obvious due to the successful execution of the security area mission. The intent was to show the kind of clear guidance that has to be issued to conduct a security area mission. There is no intent to imply that only a battalion task force can conduct a guard mission. A company team could conduct a guard, although obviously in a smaller area.

No matter which mission is executed in the security area or how the command and control responsibility is divided, the battle hand-over between the security area and the MBA is critical. The commander has to ensure that the engagement of the enemy is seamless between the two areas, while extracting the security area force to a subsequent position or mission. This effort will be further complicated by the fact that only one portion of the security area may be in heavy contact, making it unclear (and maybe unnecessary) to withdraw the entire security area force. In such a situation, one part of the security area may be withdrawn, while the rest stays in place, perhaps requiring a change in the command and control relationship in the security area. The successful execution of the defense will demand a flexible plan and almost certainly the movement of units from one subordinate headquarters to another. This will take place during the fight as well as before it. The first task organization changes on the fly will probably be made in the security area.

Fire Support

The fastest way to concentrate combat power is through the fire support BOS. What often happens is that a commander and his staff do not adequately meet the needs of the security area unit. It would seem obvious that the security area would receive the initial priority of fires. Frequently, the positioning of the artillery firing units is not cross-checked with the range requirements of the security area. If the indirect fires are to be truly effective, they must be fully
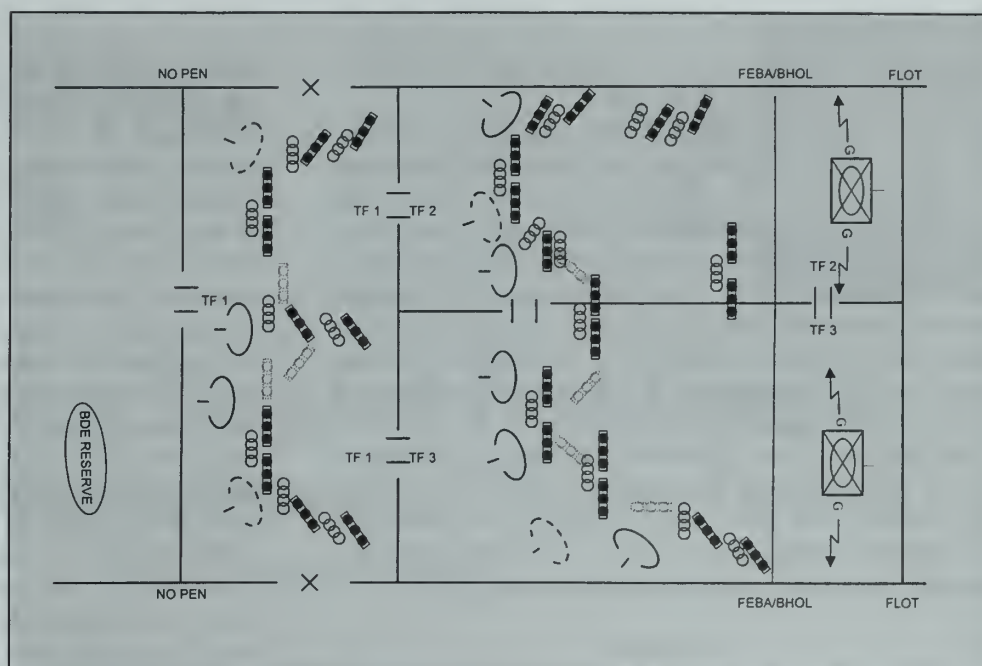
Figure 2

integrated with the direct fire plan and the obstacle plan.

When a unit is conducting a screen, the commander generally intends that most of the enemy engagement be with indirect fire, as this puts the security force at the minimum risk while allowing very effective fire to be placed on the enemy. The fire support units themselves must be maneuvered during this process. In most cases, the best positions for the artillery or mortars to support the security area are not the same ones they must be in to support the MBA fight. The responsibility for coordinating this movement rests with the staff, and the principal reason it does not happen is that the requirement was not recognized during the decision making process, specifically during war gaming.

The requirements for counter-fire radar coverage are also overlooked, as leaders outside the artillery community generally do not recognize the range or accuracy of the Q36 and Q37 radars. The security area should be allocated a reasonable number of critical friendly zones (CFZs) to be used in the counterfire program. Most units do not use these zones at all, and the artillery battalion ends up either placing them on their firing batteries or not using them at all.

Assuming that the commander has decided to use and allocate artillery final protective fires (FPFs) and/or priority targets, it is important that the security area force get a reasonable share of these assets. The priority targets could be used to engage an important target with preplanned fires, while the FPFs could aid in the displacement of the force when ordered to conduct battle hand-over with the MBA units.

Countermobility and Survivability

When the commander and staff are planning and executing the obstacle portion of the defensive concept, the security area often gets too few of the assets. There is almost always an obstacle intent to be executed in the security area, and the

security force commander must receive the appropriate amount of class IV/V obstacle materiel and the engineer platoon hours to accomplish the task.

In order for the security area mission to succeed, the obstacle intent must accomplish at least three things: allow the security force to place accurate effective *indirect* fires on the enemy, allow the security force to place accurate *direct* fires on the enemy, and assist the security force in conducting a battle hand-over with the MBA task forces. The obstacle intent for the security area is the senior commander's responsibility; he will either establish it for the security area commander or approve the intent as part of the overall concept presented by the security area commander.

The priority of work must be approved by the commander with all the implications fully explained by the staff. Generally, we work from front to rear—beginning in the security area and then working in the MBA. The obvious reason for this is that the security area will engage the enemy first.

Air Defense

When the force for the security area is task organized, the air defense portion tends to be overlooked. This leads to some obvious problems when enemy air assets show up, even if they are only reconnaissance aircraft. The first thing—which should have been determined during the wargaming—is whether or not the Patriot or other air defense coverage will extend into the security area; sometimes it does not. The security area will benefit greatly from the early warning feeds that go to the air defense units. Although this information may be available from other sources, units have a lot of problems getting the early warning nets to work on the command net or other nondedicated frequencies. The time when the security force will be the most vulnerable to air attack is during battle hand-over with the MBA when the bulk of the area force will be moving.

Combat Service Support

The CSS assets will definitely earn their money during a security area mission. The commander and staff have to track a number of things and conduct considerable planning with the forward support battalion (FSB).

The plan to support the security area obstacle effort must be airtight. There is almost always a shortage of time, and this can be worse when all the needed materiel is not where it should be. The security area units should be allocated a class IV/V supply point for their obstacle materiel needs. The designation of this point and the responsibility for running it is a command issue, not a CSS or an engineer issue, although those operating systems do have a vested interest in what goes on there. The FSB must ensure that materiel handling equipment is on hand to move some extremely heavy and bulky items from the supply point to the site where the obstacles will be emplaced. Engineers should not constitute the work force at the supply point; their time is better spent on the obstacles themselves. The packages of obstacle materiel should have been pre-configured, probably at corps level, and sent as a corps through-put to the supply point. In order to ensure that the corps trucks get to the right place, a first destination release point (FDRP) should be established and the corps trucks led forward from this location to the security area IV/V supply point. The FDRP is usually established at the brigade support area (BSA), and this same procedure would be used for the rest of the defense as well.

The casualty evacuation plan will stretch the medical community. A solid casualty evacuation plan will include the use of helicopters for the critical patients, and a robust ground evacuation plan, as the enemy air defense may prevent the helicopters from flying. It may even be necessary to plan for indirect fires to suppress enemy air defense missions. The commander and staff cannot allow the briefing of the evacuation assets only; they must understand the plan and be confident that it will work.

The security area commander should plan on removing all non-critical CSS assets from the area so that they do not impede the battle, the subsequent battle hand-over, or movement to a new mission. These assets could then form the advance party at the new location.

The security area is one aspect of the defense—the hardest thing to do tactically. The defense is difficult primarily because the initiative rests with the attacker, and he will determine when the action begins. The commander and his staff must understand exactly what the security area force is to do and ensure that it has the resources to execute according to his intent. The security area has to contribute to the one thing every defender wants—to wrest the initiative from the enemy, thereby setting the conditions to attack and destroy him.

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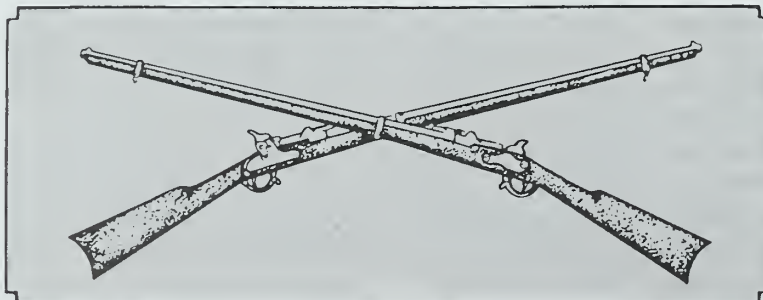
TRAINING NOTES

Improving Combat Readiness
Developing and Implementing Effective Training

COLONEL THOMAS M. JORDAN

A cursory glance at defense articles in recent years will indicate a disturbing trend that reflects declining readiness and poor unit performance at the Army's combat training centers (CTCs) such as the National Training Center (NTC) at Fort Irwin. A wide variety of observers report that units rotating through the CTCs often lack skills in such fundamental areas as logistics, battle command, and communications.

We should all ask why. The Army training methodology outlined in Field Manuals (FMs) 25-100, *Training the Force,* and 25-101, *Battle Focused Training,* is unparalleled by most major corporations. Our officers and NCOs spend hours learning the training system at basic and advanced training courses. Why, then, are soldiers and units arriving at the CTCs untrained in basic individual and collective skills?

Developing and implementing a solid training program has always been a challenge. A host of constraints ranging from unit turbulence, last-minute taskings, and unplanned visits can play havoc with the best plans. Junior leaders become unavailable due to new requirements. Red cycles, and other large-scale taskings, consume battalions for weeks at a time. Busy leaders sometimes fail to provide adequate resources. They don't give trainers the time they need to prepare. Perhaps they

don't think through their plans enough to make sure all the details have been worked out. Whatever the reason, the cumulative effect of these constraints contributes to a loss of focus and, more important, to soldiers less trained than they should be.

Certainly the Army today is doing more with less. A recent Congressional Quarterly Report confirmed that a decade after the collapse of the Soviet Union, the military services are busier than ever. These additional deployments have brought a new focus on operations other than war. While some claim that peacekeeping operations do not degrade the warfighting skills of individual soldiers and leaders, the fact remains that units preparing for or conducting peacekeeping shift their primary focus to nontraditional tasks instead of honing traditional warfighting skills.

Undoubtedly, 15 consecutive years of declining buying power has taken its toll on training opportunities. The lack of funding for base operations causes commanders to shift money from training accounts, and the result is that units arrive at the NTC at a lower skill level.

Another reason for declining performance at the NTC is the lack of emphasis on training fundamental combat skills at company and platoon level. As new conditions have limited the mass home-station train-up model, we have

not adjusted company level training programs to make up the difference. Now is the time to shift our focus.

With the average daily cost of a full-scale NTC deployment now exceeding one million dollars, this should not be the first place that soldiers learn how to boresight and zero their individual and crew-served weapons, Bradley fighting vehicles, and tanks. Moreover, to get the most payoff in this age of limited training opportunities, units should arrive trained on such fundamentals as land navigation, squad and platoon tactical maneuver, command and control, and logistical sustainment.

To that end, this article offers some recommendations for battalion and company leaders on developing and implementing a training program based on the fundamentals. Second, it suggests a number of training management techniques that will help leaders develop a more effective program.

A few years ago at a division quarterly training brief, the division commander asked a battalion commander to depart from the briefing chart and elaborate on several individual and collective training events. Specifically, the general wanted to know how the battalion and company mission essential task lists (METLs) related to individual skill training and platoon battle drills. Furthermore, the general wanted to

know the frequency of training on each task, and how that frequency had been determined. He asked the commanders to discuss the performance standards that would provide specific measures of effectiveness. Finally, he wanted to know how the commander would certify trainers and how soldiers would receive feedback. In retrospect, it was a fair question and the battalion commander should have answered easily, but the pause and the stricken look on his face made it painfully apparent that the general's probing question had uncovered uncharted territory. Taking the unfortunate commander's silence as a reflection of a lack of training expertise, the general proceeded to deliver a long tutorial on the fundamentals of training management.

As FM 25-101 indicates, determining what to train on should flow from the METL process. Commanders should feel comfortable with their METLs and, more important, the METLs should reflect the critical collective tasks that make up the unit's wartime mission. Some argue that peacekeeping tasks should be included in the METL, but I would argue that they should not. The Army has always supported the nation by performing tasks outside of warfighting requirements. But this does not detract from the fundamental purpose of Army units, which is to deter or to fight and win the nation's wars. While a unit may temporarily support peacekeeping operations, firefighting, or any other non-related tasking, it is important that we do not lose sight of the primary purpose that our organizations serve.

With limited training time and resources, leaders should focus their training plans on developing and sustaining fundamental skills. With the turnover in many units averaging 12 to 15 percent per quarter—along with numerous demands on time—many units would be hard-pressed to advance beyond the basic skills. Moreover, focusing on the fundamentals enables the unit to attain a reasonable level of proficiency within the commander's standards.

How does one determine the fundamental individual and collective tasks? FM 25-101 states that leaders use battle

focus to refine the list to include mission-related tasks that are essential to the soldier's duty position. Said another way, the fundamental tasks should encompass both leader and soldier skills that support the accomplishment of the unit's mission essential tasks. For example, combat arms units will perform five basic functions: shoot, move, communicate, secure, and sustain. Within these functions, individual soldiers, squads, and platoons must be able to perform the basic tasks and drills that enable the unit to accomplish its METL tasks. Leaders must reflect their proficiency in leader tasks while crews, squads, platoons, and companies must be able to perform the basic collective tasks. Company officers and sergeants need to understand the link between

In developing quarterly training plans, all commanders should establish the goals for individual and collective training and work to that end.

scheduled training and the individual and collective tasks and drills. This is critical to leaders with limited training opportunities because it allows them to identify and train the specific tasks that directly relate to fundamental skills.

As a function of policy, battalion should focus on training platoons while companies focus on training individuals and squads. While centralizing training at the battalion level ensures an efficient use of resources and adherence to standards, a battalion seldom has the luxury of focusing on one event at a time. Because of limited resources in equipment and personnel, centralizing can work well for certain events, such as training the common tasks, the Expert Infantryman Badge tasks, or the Expert Field Medical Badge tasks.

But centralizing does little to develop company commanders, first sergeants, and platoon leaders. Decentralizing individual and squad training at the company level and below places responsibility where it belongs. Squad proficiency is the focus of the company and platoon leadership. Company com-

manders and first sergeants need to learn how to conduct multiple requirements while also developing and maintaining fundamental combat skills. This can be accomplished only through a decentralized program that reinforces junior leader initiative and responsibility.

In developing quarterly training plans, all commanders should establish the goals for individual and collective training and work to that end. Training on individual tasks is a prerequisite for honing collective capability. As soldiers and leaders attain individual proficiency, they advance to collective training events where the entire effort can be practiced through focused battle drills. As the quarter comes to an end, leaders must assess individual and collective proficiency on the fundamental tasks against the standards, and develop the next quarterly plan accordingly.

In planning and conducting training, I believe there are several common mistakes that leaders need to avoid. The first is underestimating the importance of individual training and rushing too quickly to collective tasks. In his highly acclaimed book *Common Sense Training*, Lieutenant General Arthur Collins observes, "individual training is the foundation on which unit effectiveness is built....it is the source of a soldier's confidence and trust in the Army." In a time-constrained environment, more effort—not less—should be placed at the individual level.

Other critical mistakes are conducting training that is not performance oriented and failing to adhere strictly to standards. Soldiers learn best by doing. A few hours in the turret of a Bradley, or learning navigation in the woods is far better than some boring class in the barracks common area. For training to be effective, Army standards must be rigorously applied. Much to a unit's chagrin, there is often a significant difference between home station training, where standards may have been relaxed, and a CTC, where standards are strictly applied.

A third mistake is not allocating time to train the trainers before conducting individual and collective training. This time helps ensure that leaders are profi-

cient and that they understand the standards. We should not assume that sergeants and lieutenants can perform the individual tasks soldiers need to know. Nor should we expect them to teach and provide feedback to soldiers without training for it. We should set our junior leaders up for success as trainers by thoroughly preparing them to coach and mentor the soldiers under their care.

Another common mistake is to make the conditions too easy. A few years ago, the commanding general of the 1st Infantry Division at Fort Riley insisted that conditions be harsher in training before an NTC rotation than at the NTC itself. Once soldiers meet the standards at one level, the environment should be altered to include limited visibility, adverse weather, and NBC conditions. This challenges the troops and prepares them for the harsh demands of combat.

Leaders should not mistakenly assume that red cycles and periods of restricted collective training offer no training potential. They must aggressively seek and create individual training opportunities. For example, when the battalion is not protected from major taskings, the commander should implement an equitable system that enables companies to train individual skills while sharing multiple tasking requirements. Depending on the level of commitments, taskings can rotate among companies to free soldiers for individual training.

Even if taskings consume most of a battalion's personnel and assets, the command sergeant major, with the help of the first sergeants, should ensure that taskings are conducted by squads and platoons whenever possible. This reinforces squad cohesion and gives the squad leader a hip-pocket training opportunity. Moreover, unless senior NCOs and junior officers are tasked out, these periods also provide leader development and certification opportunities for upcoming collective events.

Once the unit has mastered the fundamental skills, commanders must follow up with a sustainment plan to maintain proficiency. Depending on the unit, leaders must determine the frequency of training necessary for soldiers to sustain an acceptable profi-

ciency level in individual and collective tasks. Because of their complexity, soldier skills in areas such as navigation, marksmanship, nuclear, biological and chemical (NBC) tasks, and live fire and movement tend to deteriorate quickly. A training program that limits soldiers to biannual weapons qualification will satisfy the minimum standard but may not sustain proficiency on rifle marksmanship.

Because of constant personnel turnover, collective skills that call for a high degree of synchronized teamwork can also atrophy quickly. For example, as a commander of a long-range reconnaissance company, I found that we had to train collective communication, patrolling, and navigation tasks every month. While units vary, a good rule of thumb

Because of constant personnel turnover, collective skills that call for a high degree of synchronized teamwork also atrophy quickly.

is that the more critical the task is to the unit METL, the more frequently it should be trained.

Many techniques can be used to plan and conduct effective training. First, company leaders should develop a system for recording training. Similar to the record of training captured in the Unit Conduct of Fire simulation, leaders need to record individual and collective training attendance and performance. This system should reflect individual proficiency on fundamental tasks as well as crew, squad, and platoon proficiency on fundamental collective tasks and key battle drills.

Second, multiple time periods of at least three hours should be programmed for individual training. This will provide adequate time to teach new tasks and conduct hands-on performance. Moreover, it allows for repetition, which is key to enhancing confidence and building proficiency. Redundant training periods are important, because not all soldiers will be able to attend the scheduled training at the same time. Institutionalize the training events so

there is a natural progression. For example, schedule individual training early in a week, such as Monday and Tuesday afternoons. As the week progresses, end it with a focused collective time period, such as Sergeant's Time, a period of weekly training where many units require the presence of all assigned personnel.

To get the most out of training opportunities, commanders should seek to multi-echelon their individual and collective training events whenever possible. For example, with a little foresight and the assistance of the local range control, a creative leader can expand a simple unit individual weapons qualification into a squad collective live-fire and maneuver exercise.

Given the limited training opportunities, the leaders absolutely must be involved. Coaching feedback from company commanders, first sergeants, platoon leaders, and platoon sergeants will go a long way in developing squad leaders and individual soldiers. As a general rule, meetings that involve company-level leaders should never take place during individual and collective training periods.

Finally, leaders should insist that either formal or informal after-action reviews (AARs) are conducted after every individual or collective training event. With the growth of the combat training centers, soldiers and leaders have learned to examine critically the effects of their actions. The more we apply the AAR process, the more rapidly we unlock the secret of self-discovery that leads to overall improvement. Moreover, it teaches junior leaders to conduct a critical self-analysis and inculcates in them a positive cultural indication that the Army is a learning, growing organization.

In the coming years, it would be unrealistic to expect the Army to gain any greater budget resources than it now has. But limited resources do not detract from the leader's responsibility to train a competent, ready unit. Whether the mission is humanitarian relief, a peace operation, or to fight and win the nation's wars, our responsibility as leaders is to ensure that our units are ultimately prepared to respond to the

nation's needs. This preparation begins by developing and implementing an effective training program. There will always be obstacles that make training difficult. But successful leaders, even in wartime conditions, have created opportunities to train their soldiers and leaders.

We must remember the unforgiving nature of combat. Leaders might think about General Douglas MacArthur's observation that, "In no other profession are the penalties for employing untrained personnel so appalling or irrevocable as in the military." Untrained soldiers die quickly in combat. We must wrestle with the never-ending struggle to meet all the requirements that seek to erode our combat readiness, and train our soldiers so they can move quickly, hit hard, and accomplish the mission the first time, every time.

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Light Infantry Weapons Squads

CAPTAIN ROBERT THORNTON

A light infantry company's medium machineguns, 60mm mortars, and anti-armor weapons are key to its ability to succeed in combat. The machineguns and mortars allow it to achieve fire superiority and provide a base of suppressive fire for maneuver elements to close with the enemy by reaching positions in defilade with high explosive, obscuring enemy fires with white phosphorus, or desynchronizing the enemy's ability to fight by well-placed indirect fire. The Dragon or Javelin will provide the company's only organic antiarmor capability. When positioned properly, these weapons can initiate a well-placed antiarmor ambush or defense of an obstacle. To reach their full potential, however, these squads must have training that goes beyond qualification and sustainment.

Weapons squads are a part of the task organization of the rifle platoon. Generally, this translates into a weapons squad leader (staff sergeant) and two gun teams, each consisting of a gunner (corporal), an assistant gunner (private first class), and an ammunition bearer. These are the same soldiers who often wind up as the antiarmor teams, because dedicated personnel for the teams are not available.

The training of the weapons squad is the primary responsibility of the weapons squad leader, the platoon sergeant, and the platoon leader. They provide the platoon with its base of fire and constitute a sizable amount of its firepower. But they do not reach their potential because operating tempo and lack of experience at the junior officer level make it hard just to maintain qualifications and support maneuver exercises.

The second lieutenant usually takes a rifle platoon as his first assignment. In

> *The training of the weapons squad is the primary responsibility of the weapons squad leader, the platoon sergeant, and the platoon leader.*

the best cases, he has three rifle squads, a weapons squad, and a headquarters, consisting of the platoon sergeant, a medic, a radiotelephone operator, and himself. He probably gets about 12 months in this job, but not always.

In a garrison environment, he and the platoon sergeant manage all the administrative aspects of the platoon, from awards, physical training, equipment accountability and serviceability, weapons qualification, and a host of other things to get ready for a readiness cycle or a training deployment. He is also

involved in planning training for his squads during upcoming tactical environments if the training exercise permits.

In a tactical or field environment, he supervises squad training (both force-on-force and maneuver live-fire exercises) and executes platoon training as part of a company or battalion directed event. Most of what the platoon does consists of battle drills at the squad and platoon level. The average second lieutenant is leaving his first job about the time he really begins to understand what needs to be done. The thinking is that he can rely on the real constants in a company—the NCOs—to help him ensure that things are done to standard. But what about time to take that training to a level beyond qualification, to a higher standard?

On the other hand, the rifle company executive officer (XO) probably has had a specialty platoon that gave him an appreciation of mobility and counter-mobility, integration of an assortment of direct and indirect fire weapons into the fight, and most of all, experience. The average XO has about two years of experience in the battalion. He understands the commander's intent better, can formulate a solid training plan within the commander's guidance, and can conceptualize nonstandard training

events. He understands relationships between time available for training due to battalion driven events, how to obtain training areas and ammunition, and how the battalion functions. He is one step away from a company command. What better officer to put in charge of training the soldiers who constitute the company's organic firepower?

The platoons will still be task organized with two machinegun teams if the mission requires it. I am not advocating removing the platoon's base of fire, but not every mission requires two machinegun teams, or an antiarmor capability at platoon level. Often the mission is better served with the company's firepower concentrated and directed to best support the momentum of the attack.

As many times as we practice a platoon mission, it does not require many casualties to make a platoon ineffective. A company stands a much greater chance of succeeding than a platoon, no matter what the odds might be. Platoons seize parts of an objective or allow another portion of the platoon or company to move forward. A habitual relationship should be formed between platoons and weapons squads, but they should be consolidated at the company level for training and tasked out as directed in the commander's order.

Consolidating the weapons squads under the XO has other benefits as well. The company mortars and machineguns can be synchronized by the XO from a consolidated support-by-fire (SBF) position. An appropriate weapons mix within the SBF has a better chance of suppressing or destroying key aspects of the enemy's defenses. Four M240 machineguns and two Javelins initiating the direct-fire portion of an attack—while 60mm fires harass enemy positions, or screen the maneuver element attempting to gain a foothold—stand a better chance if they are well coordinated.

With technical innovations—such as the soldier intercom system, night vision devices (NVDs), better optics, and laser aiming devices—fires can be redirected quickly as maneuver elements become bogged down or other elements are passed through. This level of syn-

chronization reduces the risk of fratricide because the less independent elements are firing into the objective. It reduces the loss of soldiers to enemy fire, because a heavy volume of well-placed fire is moved onto the enemy as necessary.

This level of synchronization does not automatically come from three weapons squads from three platoons task organized into a company SBF for a specific mission. Instead, it requires that the company base-of-fire train its individual parts as a whole all of the time. Every maneuver live-fire range I have seen has suffered from several problems. The surface danger zones (range fans) require that only certain positions be occupied as an SBF. These positions are too close to the objective because the closer the SBF, the narrower the fan. If it were farther away, the left and right limits would inhibit maneuver onto the objective. This is a part of maximizing safety while being able to integrate all of the company's organic direct-fire weapons.

This method of training does not train all aspects of providing a base of fire for a maneuver element. Like indirect fires, which are governed by a similar set of guidelines, it does exercise some of the coordination pieces, but not as many of the required skills—such as concentration of direct and indirect fires or shifting all weapons in the SBF to sustain momentum. It's not easy to achieve overlapping beaten zones in front of the element moving across the objective while simultaneously neutralizing bunkers and destroying vehicles with missiles or providing indirect fires that screen, mark targets, or isolate the objective. Units must train for this, and train hard. You can't just show up at the fight and hope to pull that off.

Since most maneuver ranges will not let you fire dud-producing munitions into a range that will be reoccupied the following day or week by another unit, or that do not have targets at longer ranges from which you can actually shift fires, you are forced to run a nonstandard training program. This program should consist of individual training such as separate ranges, coordinated rehearsals such as rock drills,

and integrated live-fire exercises.

The leaders within the consolidated weapons section should attend individual training on qualification ranges, as a minimum. For example, the mortar squad leaders and section sergeant should have an understanding of things like the fire control and distribution required of an M240 gunner. Conversely, the weapons squad leader should be thinking about such things as how a short round of white phosphorus could affect his part of the mission. This kind of appreciation can go a long way in preventing or quickly solving problems that are bound to occur when things are most critical. It will also make the most of training resources.

The capstone training event is an integrated live-fire exercise that would replicate in both intensity and duration the fire support of a maneuver element's movement onto and across the objective. Most impact areas have ranges or sections dedicated to indirect fire weapons and attack aviation, and these areas are usually target rich with old combat engineer vehicles, tanks, personnel carriers, and assorted other objects. The area selected should provide targets that require shifts laterally and in depth, and should also support range fans for all the weapons to be fired.

Since there is no actual maneuver element to force the shifts in fire, these should be designated by the fire plan, with the XO providing the cue. An audible signal that causes a change in the fire plan due to engagement criteria for the Dragon or Javelin gunners, such as a vehicle moving onto the objective, is an example of intentionally disrupting the fire plan to train the SBF to react, engage the target, then pick up where it left off, while continuing to maintain the momentum of the maneuver element.

What I noticed as a lieutenant in the light infantry was that it was difficult to make any real headway in training the weapons squad. As a second lieutenant rifle platoon leader, I had a full plate and did not understand the full value of my weapons squad. The only time I saw them receive the kind of attention and training that made them lethal was

the train-up provided by the live-fire branch at the Joint Readiness Training Center.

With training time divided among a number of tasks, I believe that consolidating the company's organic firepower for training and then cross-attaching those assets to meet specific mission requirements can raise the level of proficiency within a weapons squad. It can turn a marginally effective base of fire into an element that supports the scheme of maneuver and maintains momentum. Once you tie the weapons squad in with the company mortars and the company's second in command, you have a capable, flexible element controlled by an experienced leader who understands what the maneuver element needs to succeed in combat.

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Team Leader Certification Course
For the Light Infantry Company

LIEUTENANT RONALD MATTOCKS

The team leader is arguably the most pivotal leader on the battlefield when it comes to the success of companies and platoons in combat. This is not meant to diminish the role of other combat leaders, but rather to highlight the need for strong leadership at the fire team level.

Field Manual (FM) 7-8, *The Infantry Platoon and Squad,* and the *Ranger Handbook* define the team leader as, "a fighting leader who leads by personal example." Both references go on to outline the numerous tasks and duties to be performed by team leaders in a field environment. TC 22-6, *The Army Non-commissioned Officer Guide*, contains several pages of responsibilities expected of team leaders in the garrison. In the field (and combat) the team leader is to be the first leader a soldier looks to for an example of what is right and the first leader he sees react when the bullets start to fly. In garrison, the team leader not only sets the example, but he is also the grease on the axle that keeps the administrative wheels of the platoon rolling smoothly.

Team leaders are meant to be knowledgeable mentors to the soldiers as well. The soldiers of the team expect them to be able to answer their questions, or at least point them in the right direction to find answers. Soldiers expect their team leader to be able to take care of them and their individual needs. Pay problems, board preparation, and personal problems are just a few areas where the team leader is the first leader a soldier goes to for guidance. Yes, the NCO support chain may ultimately be involved in the solution, but there is more than one platoon sergeant or squad leader out there who is thankful for an experienced team leader who can take care of most of the leg-work before bringing the issue to his level. A team leader who can take care of his soldiers earns the confidence of both his men and his supervisors.

There is another reason to recognize the importance of good team leaders. FM 100-5, *Operations*, points out that, "In the chaos of battle, it is essential to decentralize decision authority to the lowest practical level." This statement underlines the need for strong leadership ability and initiative at the team leader level. It is not inconceivable for a team leader in a combat situation to become the squad leader or platoon sergeant (this happens frequently at the combat training centers). Team leaders need to be ready to step into these positions and have the personal confidence to execute in the absence of direction. The ability to understand and execute the mission two levels up is a cornerstone of our leadership doctrine and is one of the reasons for placing priority on developing and training subordinate leaders.

The Reality

With the importance of the team leader's role established, a fundamental problem remains. Many, if not most, team leader positions in rifle platoons are not manned by experienced corporals or sergeants, but by good specialists (or even privates first class). In some cases the "good" specialist might not really be that good, but just happened to be the next ranking soldier. He may lack the experience required to be immediately effective in their position, and the squad leader and platoon sergeant must pick up the slack in enforcing standards and accomplishing tasks. Because of their junior rank and inexperience they also have trouble maintaining a degree of separation from their peers, which hampers their ability to make on-the-spot corrections and enforce standards of discipline.

This inexperience, again, comes into play concerning field craft and responsibilities. Many times they are unaware of what is expected of them. Other leaders expect them to know their jobs and carry out their tasks as experienced team leaders, but what is expected is not

always what happens. For example, in a platoon hasty defense, the platoon leader does not have the time to position each and every weapon. He relies on his NCOs, namely the squad and team leaders, to establish sectors of fire within the boundaries given them for their squads and teams. Platoon leaders and platoon sergeants should make spot checks only to ensure the sectors are correct and offer full coverage. Finding sectors that are incorrect causes the platoon leader to make further checks and corrections, which detracts from his time to accomplish other critical tasks. In this environment, leaders may not have the time to show subordinate leaders how to accomplish a task correctly and to standard.

Training to the standard is a must for all leaders and units, but *teaching* the standard must be done first. These young team leaders cannot be blamed for their inability to enforce standards of training if they have never been taught what the standard is to begin with. This is one of the purposes of the Primary Leadership Development Course (PLDC)—to teach and instill a baseline for Army standards in future NCOs. Unfortunately, a number of team leaders have not attended PLDC and wait in line on the Order of Merit List. In the meantime, they must rely on the day-to-day activities in garrison and collective unit training in the field to gain whatever experience they can. Rarely do they become the focus for training. When NCO professional development sessions are planned, many team leaders are excluded because they are not yet NCOs, thus widening the gap in experience.

In short, a great deal is expected of team leaders, yet they lack the knowledge, tools and experience to do the job well. Colonel (Retired) Dandrige M. Malone formulated a simple equation for combat success in his book, *Small Unit Leadership: A Common Sense Approach*. Simply put, WILL x SKILL x DRILL = KILL. This formula applies at every level of individual and collective training. A team leader may have the will or desire to lead, but lacks the experience in skills and training (drill) to be successful. Team leaders need to

be given the opportunity to learn how to apply their will, increase their skill, and continually drill so they can become proficient and gain the experience they need to be effective. The start point for this equation is to place a high priority on team leader development to bridge leadership deficiencies. One possible solution is a simple, team leader certification course at the company level.

The Course

The scope of the course would involve prospective team leaders who have not yet attended PLDC. Platoon sergeants would recommend candidates to the company first sergeant who would review the potential team leader's packet to ensure his potential. The prospective team leader would be notified of his nomination and of the information he should begin studying in preparation for the course. Platoon sergeants and squad leaders are responsible

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Battles are fought and won by Infantry squads. Place emphasis on small unit combat instruction so that it is conducted with the same precision as close-order drill.
General George S. Patton, Jr.

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for helping prepare their candidates. Those soldiers who successfully complete the course receive a training certificate and documentation in their training records. Satisfactory completion of the course could serve as ranking criteria for order-of-merit lists to PLDC and other schools. Failure to complete the course would result in counseling and the first sergeant's determination as to the candidate's future as a team leader.

The recommended course format is broken down into two phases over five days, depending, of course, on what material a company deems necessary for their team leaders. The first phase is in a classroom environment covering various topics. This phase is immediately followed by a field phase that allows practical application of subjects covered in the classroom. Courses can be scheduled six weeks out, or in accor-

dance with the battalion's policy for submitting training schedules. Red Cycles (except for high-priority tasking weeks), or other periods of low training intensity make ideal times to schedule the course.

Once subject matter is determined, the platoon sergeants write the course outline with the first sergeant acting as the quality assurance control for the classes and their presentation. Course material is carefully reviewed, and clear tasks, conditions, and standards are established. Platoon sergeants then act as primary instructors, where appropriate. Senior squad leaders also act as instructors or as graders on training lanes in the field. Minimum course size is nine soldiers, with a maximum of eighteen. This number is manageable and keeps the strain on the company to a minimum.

Candidates are required to pass the Army Physical Fitness Test on the day before the course begins, with platoon sergeants and squad leaders scoring the events. Candidates are also required to pass the height and weight standards or tape test as applicable. During the course, candidates administer PT to their platoons or squads. Squad leaders grade the candidates on their ability to conduct a proper PT session. Following the session, the candidates receive written and oral performance counseling, which is included in their packets.

Military knowledge is also important, as team leaders need to display their competence to team members. Candidates are administered a comprehensive written exam covering a wide area of military subjects, including unit policy letters, knowledge of FMs and Army Regulations, unit history, and unit standing operating procedures. Other areas can be added to this as well, depending on what knowledge is considered essential for team leaders. An even better idea is to conduct a board for team leaders before enrollment in the course, which prepares them for future promotion boards. Preparation on the part of the team leader and his support channel, well in advance of the course, is essential to his success in this area.

In the two and a half days of class-

room work, team leaders are exposed to a wide array of subjects essential to their success. Each of these subjects is covered in a block of instruction, which is followed by either a practical exercise, performance measure, or written exam to ensure the team leader's understanding of the material. The course covers several areas, including counseling. Here the team leader is taught the importance and purposes of counseling as well as the standard for counseling. Maintenance is covered as the team leader learns how to conduct and supervise maintenance procedures, along with using technical manuals and filling out paperwork correctly.

Team leaders are also educated on the enlisted promotion system, not only to know how to manage their own careers, but also to understand how best to take care of their soldiers. Another subject area is troop-leading procedures (TLPs). Team leaders are taught how to issue operations orders and how they fit into the orders process at the small unit level. Finally, administrative and field responsibilities are covered, giving the team leader a broad knowledge of his duties and responsibilities.

Following the classroom portion of the course, team leaders are exposed to practical leadership in a field environment. Here they are evaluated by senior squad leaders on their ability to perform duties as either squad or team leaders. Candidates are rotated out of positions following a designated event and are evaluated immediately on their performance. The counseling is tracked on a card, which is placed in the candidate's complete packet.

The primary vehicle used for evaluating the team leader's performance is squad size situational training exercise (STX) lanes. Candidates are given a fragmentary order to an earlier operations order, and are then given 90 minutes to conduct TLPs, move to the objective, and conduct the mission. Candidates are critiqued on how well they influenced their squad members to perform various missions and battle drills. In conjunction with the STX lanes, team leaders are also given classes on patrolling techniques and squad patrol bases, and are required to pass a day and night land navigation course.

Upon return, the students conduct maintenance on equipment to reinforce the recovery standards covered in the earlier classroom portion. Before their release, candidates are required to complete a class critique and turn it in for review by the first sergeant. Instructors and graders are also required to turn in a critique with recommended improvements. Changes based on these recommendations are made at the discretion of the first sergeant.

The Advantages

Developing and implementing a team leader training program at the company level holds several key advantages.

The first is that companies can easily manage the team leader course. With more than a few experienced NCOs in the unit, responsibilities can be divided over a wide base of personnel. It is important, however, that key personnel be designated at least six months ahead in order to avoid last-minute preparation and frustration. Instructors and graders should also be rotated so that the workload is equally distributed.

A second advantage is that the course does not have to be resource intensive. Logistical needs can be kept at a minimum without sacrificing training standards. Again, it is important to forecast supply requests well in advance of the course and to protect resources from other training events. But it is also important not to let the course become a drain on a unit and its mission essential tasks. If the course does overtax the unit's resources and personnel, it is not likely to be continued for long.

Standardization of information in the company is another benefit of the course. With the senior NCOs developing the course material and teaching it to the junior NCOs, the company leaders are literally reading off the same page. Unit SOPs and policies are understood and enforced to higher standard. Administrative procedures are carried out more efficiently because team leaders require less supervision, and soldiers are hearing the same information from the all NCO leadership in the company.

Finally, the biggest payoff of the course is that it gives junior team leaders the confidence they need to do their jobs well. Knowledge truly is power for leaders and with this power, team leaders can project themselves with more confidence in front of superiors and subordinates. Knowledge also gives team leaders the fuel they need to exercise higher levels of initiative in work performance. Team leaders are now able to recognize situations and execute tasks faster and with less supervision. The confidence and satisfaction gained by team leaders in doing a job to a higher standard can also improve the chances of retaining these soldiers when their enlistments are up.

S. L. A. Marshall wrote that platoons determine the fate of armies. He and General Patton both knew from history and experience that success on the battlefield is not determined by great tactics or the best equipment (although both help), but by competent leadership at the small-unit level. Our team leaders are the first link in small-unit leadership, and they need the tools to perform their duties to the highest degree. If team leaders determine the fate of armies, then fire teams determine the fate of companies and battalions.

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Don't Just Service Equipment...
Service Entire Companies

MAJOR BENNIE WILLIAMS, JR.
FIRST LIEUTENANT GREGORY R. COX

In addition to conducting equipment services, most mechanized infantry battalions also conduct services to ensure the readiness of personnel. In addition, one mechanized infantry company of the 1st Battalion, 12th Infantry, at Fort Carson, Colorado, scheduled and executed the *company*-level services of all equipment and personnel. Within that company, the consensus was overwhelming support for company services, and other battalions may want to plan and conduct such services.

The areas and systems that must be maintained include vehicles, vehicle weapon subsystems, and communications systems; individual and crew-served weapons; NBC (nuclear, biological, chemical) equipment; and arms room equipment. The other areas to be inspected and updated are primary and sub-hand receipts; licenses and DA Form 348s, soldier readiness processing (annual, scrubbed semiannually), reenlistment cards and completeness of counseling, and counseling packets spot-checked by the first sergeant.

To maintain the focus and the command emphasis, these inspections and services should be placed on long-range schedules six months in advance and briefed by the company commander to the brigade commander at the quarterly training brief. At the same time, the company must coordinate with the battalion operations officer for ammunition and a range on which to conduct the test fire of weapon systems.

Next, the company identifies the task organization of maintenance equipment and personnel: (see chart, next column). The battalion maintenance officer

(BMO) augments the company maintenance team to provide the support to service a company. Then the company must prepare the services plan and brief it to the battalion commander, no later

than 30 days from the start of services.

Secondly, the company must prepare. To begin, −20 level technical inspections must be conducted no later than 30 days out to identify all needed parts.

TASK ORGANIZATION

Current Maintenance Support
(1) 63T40 – Team chief
(1) 63T30 – Shop foreman
(1) 63T20 – Senior hull mechanic
(1) 63T20 – Recovery NCO
(1) 45T20 – Senior turret mechanic
(3) 63T10 – Hull mechanics
(2) 45T10 – Turret mechanics

Services Augmentees
(10) Hull mechanics (3 NCOs)
(3) Turret mechanics (1 NCO)
(3) Wheel mechanics (1 NCO)
(4) Mechanics from recovery section
(2) M88s from battalion recovery

REQUIRED MAINTENANCE SUPPLIES		
NOMENCLATURE	NSN	QUANTITY
FUEL FILTER	00-152-2033	28
BATTERY CLAMPS	00-549-6581	336
PROP SHAFT BOLTS	01-132-3369	250
VENT FILTERS	01-113-1248	28
ENGINE AIR FILTER	01-291-5893	14
COTTER PINS	00-815-1405	200
RIGHT ANGLE DRIVE SHAFT	01-151-7825	7
DRIVE SHAFT BOLTS	01-110-7871	100
STEAM CLEANERS	NOT APPLICABLE	4
SHOP VACS	NOT APPLICABLE	4
GROUND HOP KITS	NOT APPLICABLE	2
ENGINE STANDS	NOT APPLICABLE	5
BATTERY TERMINAL PULLER	NOT APPLICABLE	6
MULTI-METER	NOT APPLICABLE	5
STE-EQUIPMENT	NOT APPLICABLE	2
FIRE SUPPRESSION TEST KIT	NOT APPLICABLE	2
LACING PLIERS	NOT APPLICABLE	4
LACING WIRE	NOT APPLICABLE	10 ROLLS
15W40 OIL	HAZMAT PHARMACY	40 GAL
GREASE	HAZMAT PHARMACY	20 TUBES
FRH	HAZMAT PHARMACY	2 GAL
ANTI-FREEZE	HAZMAT PHARMACY	40 GAL
GMD	HAZMAT PHARMACY	2 GAL

Table 1. Example of maintenance team service stock

COORDINATIONS	POINTS OF CONTACT
WHEEL ALIGNMENTS	FWD SPT BN
SANITATION CHECKS	POST SANITATION
SOLDIER READINESS	SRP SITE
TEST FIRE RANGE	BN OPERATIONS
TOW VERIFICATION	MISSILE TEAM
BOLT EXTRACTION	FSB WELDER
WEAPONS GAUGING	ARMAMENT
SAFETY IN MOTOR POOL	POST SAFETY
VEHICLES PAINTED	POST PAINT SHOP
BARRACKS/CP MAINT	PUBLIC WORKS
POL PRODUCTS	SUPPORT PLT
STEAM CLEANERS	BN MAINT SGT

Table 2

Immediately after the inspections, the unit must order service stock and replacements for deficient parts. Each activity—arms room, NBC, supply, communications, master gunner, and maintenance—must order parts and make sure they have their service stock before the service start date (see Table 1 for an example of maintenance team service stock). Concurrently, the company must make essential coordinations outside the battalion (Table 2).

After the planning, ordering, and coordination has been completed, the company is prepared to execute its services. On Day 1, the company establishes a command post in the motor pool and maintains it for the duration of services. The company supervises and monitors the progress of services using tracking charts to make sure the mission is accomplished in spite of time constraints (see example in Table 3).

The management skills of the maintenance team chief are put to the test, supervising an additional 20 mechanics and maintaining and operating two more M88s. Therefore, the focus of the company's leader helps the maintenance team chief ensure that the necessary resources and all the operators are available, with supervisors present.

It is also essential that all key leaders be present for a daily after-action review (AAR). The executive officer monitors the systems, and the first sergeant monitors personnel. They talk with each other to make sure they are identifying all the issues and learning points. Without AARs, many key platoon and commodity issues will never be noted or corrected.

Upon completion of services, a thorough AAR must be conducted with the battalion executive officer and the battalion staff. Shortly thereafter, the company leaders outbrief the battalion commander on the lessons learned and recommendations for future services.

In voicing their support, the noncommissioned officers of the serviced company in our battalion stressed two important factors that ultimately led to success: the absence of Red details that had always detracted from platoon services, and a command focus that made sure all the necessary resources and personnel were available to effectively service the company's equipment. These are the chief reasons mechanized infantry battalions should service entire companies, not just equipment.

Turret					
TASK	C21	C22	C23	C24	
INSTALL PARTS ON HAND	X	X	X	X	
COMPLETE TURRET PACKETS	X	X	X	X	
Hull					
TASK	C11	C12	C13	C14	C65
REMOVE/CLEAN/SERVICE BATTERIES	X	X	X	X	X
COMPLETE LUBE ORDERS	X	X	X	X	X
INSTALL PACS	**	X	X	X	X
INSTALL PARTS ON HAND	X	X	X	X	X
MG GUN SERVICE	X	X	X	X	X
TOW VERIFICATION	**	**	**	**	N/A
ALL					
TASK	1st/A	1st/B	1st/1sqd	1st/2sqd	
CLEAN/SERVICE ARMS ROOM EQUIPMENT	N/A	N/A			
CLEAN/SERVICE COMMO EQUIPMENT	N/A	N/A	X	X	
CLEAN/SERVICE NBC EQUIPMENT	N/A	N/A	X	X	
AFTER-ACTION REVIEW	X	X	X	X	
TASK	2nd/A	2nd/B	2nd/1sqd	2nd/2sqd	
CLEAN/SERVICE ARMS ROOM EQUIP	N/A	N/A	X	X	
CLEAN/SERVICE COMMO EQUIP	N/A	N/A	X	X	
CLEAN/SERVICE NBC EQUIP	N/A	N/A	X	X	
AFTER-ACTION REVIEW	X	X	X	X	
TASK	3rd/A	3rd/B	3rd/1sqd	3rd/2sqd	
ORDER ARMS ROOM PARTS	X	X	X	X	
ORDER COMMO PARTS	X	X	X	X	
ORDER NBC PARTS	X	X	X	X	
AFTER-ACTION REVIEW	X	X	X	X	
TASK	HQ Plt				
CLEAN/SERVICE ARMS ROOM EQUIP	N/A				
CLEAN/SERVICE COMMO EQUIP	N/A				
CLEAN/SERVICE NBC EQUIP	N/A				
AFTER-ACTION REVIEW	X				

Table 3

Major Bennie Williams, Jr. led a platoon in the 1st Battalion 5th Cavalry, and commanded a company in the 1st Infantry Division. When this article was written, he was executive officer for the 1st Battalion, 12th Infantry, 4th Infantry Division. He is a 1984 ROTC graduate of South Carolina State University.

First Lieutenant Gregory R. Cox was a company executive officer in the 1st Battalion, 12th Infantry, 4th Infantry Division.

PMCS Certification
A Mechanized Infantry Combat Multiplier

CAPTAIN JAMES D. NIELSON

Over the years, mechanized infantry units have faced the dilemma of trying to manage and balance training with the demands of maintenance. The question is: How do we spend less time maintaining our fleet and more time training on our mission essential tasks list (METLs)? The answer is "doing it right the first time," while enforcing high standards that are institutionalized over time and ingrained into our operators and leaders. This can be accomplished with a certification program that allows us to balance readiness and training. At the same time, units must let their NCOs and leaders know that if they do it right the first time, they will have more time to train their soldiers on collective tasks.

A high-quality PMCS certification program will help a unit do each of the following things:

• Learn a common set of PMCS standards, techniques, and procedures.

• Learn what is expected of each soldier and leader.

• Share knowledge with each other.

• Identify problems and trends.

• Seek new ideas to improve maintenance operations.

• Improve maintenance proficiency and efficiency.

Proper PMCS is the baseline for all unit maintenance. According to Field Manual (FM) 9-43-1, *Maintenance Operations and Procedures*, "the cornerstone of unit maintenance is the operator/crew performing PMCS from applicable operator's series (–10 level) technical manuals." As I have found both

in the field and in garrison, rigorous adherence to PMCS schedules will identify deficiencies before they become disasters. The next step, however, is to ensure that operators and crews actually *know how* to conduct the PMCS; this knowledge does not come entirely from a manual, but also from an effective certification program for all soldiers in the unit.

PMCS certification is a training program that can take three to five days; although it is time consuming, a commander will find this certification is critical to the accomplishment of his

TOPIC	LENGTH
DAY 1	
Introduction/Safety	1 hour
5988-E/Parts Ordering Flow	3 hours
M998 PMCS Class	1 hour
Practical Exercise	2 hours
DAY 2	
M2A2 BFV Class	1 hour
Practical Exercise	4 hours
M113/M577/M1064 Class	1 hour
Practical Exercise	2 hours
DAY 3	
M35A2 Class	1 hour
Practical Exercise	3 hours
M923/M936 Class	1 hour
Practical Exercise	2 hours
DAY 4	
M977/M978 Class	1 hour
Practical Exercise	2 hours
Generator/Steam Cleaner Class	1 hour
Practical Exercise	3 hours
DAY 5	
Testing	2 hours
Retraining	As required
Retesting	As required

unit's maintenance—and hence, combat—mission. The program is designed to teach soldiers at all levels the correct way to conduct PMCS. It will help prevent shortcuts in PMCS, highlight the importance of maintenance, and increase leader involvement. It will also increase a soldier's general level of maintenance knowledge and establish a standard for the battalion. These learning points will have a positive effect on the unit and, by improving the overall maintenance program, will increase the combat readiness of the entire unit.

Following is a suggested five-day training program that will cover each type of vehicle in the fleet of a mechanized infantry battalion. It can be modified to be shorter or to focus only on specific vehicles; but this program will teach soldiers how to conduct a PMCS on all vehicles in the battalion, and will also address other maintenance related topics such as the flow of a DA Form 5988-E, *Equipment Maintenance and Inspection Worksheet*.

The practical exercises have been designed to allow enough time to conduct thorough, correct PMCS. Hands-on training is critical for this type of training, and the practical exercises will help soldiers learn exactly how to inspect the vehicle. Although the course can be modified to address only certain types of vehicles, the first several classes on safety, DA Form 5988-Es, and parts flow are highly recommended.

Day two will cover the tracked vehicles within an infantry battalion. Because of the similarities between M113s, M577s, and M1064s (mor-

tar carriers), these have been included in one class. A proper PMCS of a Bradley fighting vehicle, the most important item of equipment in the fleet, is estimated to take four hours.

The third day will cover cargo wheeled vehicles, including 2.5- and 5-ton trucks, and day four will cover both heavy expanded-mobility tactical truck (HEMTT) cargo and fueler vehicles. The fourth day will also address generators and steam cleaners. As we all know, a unit must maintain these items of equipment to ensure smooth field and garrison operations. Day five will be a final testing day, with time allotted for retraining and retesting. Testing should include both a written examination and a hands-on exercise, in which students must identify faults on the vehicles during their PMCS.

In today's dynamic Army, leaders and soldiers are often faced with many different tasks at once, and PMCS is another mission to add to the day's agenda. Because of the fast-paced nature of most units, this will lead to shortcuts in PMCS procedures. Over time, these shortcuts become accepted, and as such, may result in overlooked deficiencies. More problematic is the arrival of new soldiers in the unit who learn bad habits—such as maintenance shortcuts—from the start; this leads to developing even further departures from correct procedures and thus will lead to an improper PMCS. A periodic certification program will remedy this problem by making sure all soldiers in the unit are familiar with "what right looks like." Additionally, new soldiers should receive the training shortly after arriving in the unit.

Placing importance on PMCS certification will also reinforce a commander's emphasis on his maintenance program. Too often, maintenance is an afterthought in daily activities; to many, the battalion training meeting or M16 range seem to be the most important event of the day. This can cause leaders and soldiers to put maintenance in the back of their minds, but strict enforcement of a PMCS training program will sustain focus on maintenance. Without this focus, the unit's readiness will suffer, and the deadline report will grow at

a pace that would frighten the most seasoned battalion maintenance officer. Most important, the unit's combat readiness will be seriously degraded.

Like most soldier tasks in the Army, PMCS is perishable without practice and, sadly, it is one that our NCOs and leaders may forget over time. As with all other soldier activities, PMCS is an event that should receive NCO supervision for proper execution. Unfortunately, many of our leaders cannot provide this supervision because they may have lost the expertise themselves. Leaders must be included as participants in a PMCS certification program to refresh their skills and ensure they have the knowledge necessary to supervise their subordinates. More leader involvement will improve the effectiveness of PMCS and will motivate the operators. A soldier will be more eager to conduct the task to standard once he finds his supervisor coaching and mentoring, and no longer absent from the motor pool.

Along these lines, leaders will learn more about their individual responsibilities regarding PMCS. It is critical that they understand what is expected of them:

• Be involved in motor pool operations and PMCS.

• Be responsible for all equipment, and know its status at all times.

• Train soldiers correctly in maintenance operations.

• Understand the system (automation, requisition flow, 5988-E flow, etc.).

• Get appropriate operators licensed for all equipment.

• Support the PMCS Certification Program.

• Get the resources required for soldiers to do jobs safely and efficiently.

First line supervisors must also be aware of their own obligations regarding PMCS. These include the following:

• Meet their leaders' expectations.

• Get personally licensed on all equipment in the section.

• Attend PMCS Certification, and ensure that soldiers do the same.

• Supervise motor pool operations/PMCS expertly.

• Pick up 5988-Es no later than the day before PMCS .

• Turn in 5988-Es no later than the close of business on the day PMCS is performed.

• Make sure the drivers or operators assist mechanics during conduct of services and PMCS.

• Coordinate directly with the platoon sergeant, the company XO, and company maintenance team chief regarding services or other maintenance operations.

Finally, each individual soldier should understand his own responsibilities:

• Conduct competent and accurate PMCS according to PMCS Certification Program.

• Get Driver's/Operator's license. Stay current.

• Be responsible for and know status of signed-for equipment.

• Conduct Weekly PMCS as required.

• Turn in 5988-E to first-line supervisor promptly.

• Demonstrate pride in ownership.

• Immediately report problems to first-line supervisor (vehicle won't start, left unsecured, etc.).

• Report shortages to first-line supervisor (safety items, BII, manuals, tools, etc.).

• Dispatch vehicle properly.

The certification program is also valuable as a tool for assessing the knowledge of soldiers, particularly mechanics. As the soldiers responsible for the verification of faults, mechanics must also be tested on their understanding of PMCS procedures. Commanders will find that assessing their mechanics' proficiency will indicate whether further training should be implemented in the form of mechanic certification. Periodic execution of the program will also provide feedback on its effectiveness and how well the soldiers have retained the information. As with all training, after-action reviews (AARs) should be conducted to determine how well the program works, and to identify changes that will improve its execution.

A quality PMCS certification program should also address the steps

taken with a completed 5988-E and the subsequent parts flow. Many operators and crews are not familiar with what happens to a submitted 5988-E, how parts are ordered, and how to verify their status. Understanding this procedure will accomplish two things: it will teach soldiers the importance of properly filling out a 5988-E, and it will give them the knowledge to ensure that parts are on order and track their status. They can therefore take a more active role in ensuring the 5988-E is correct for their equipment, and not simply conducting the PMCS and turning in the form to their supervisor. As a platoon sergeant once remarked to me, "Most leaders don't understand what happens to a 5988-E; a good PMCS certification program can fix that. I have been through several myself and now I actually understand what the parts status codes mean."

Perhaps most important, an effective certification program will establish a standard for the unit. Each member of the battalion will understand the proper way to conduct PMCS, and each leader will be able to supervise the execution. Without a unit standard, operators will be free to conduct the PMCS however they may interpret the TM; teaching each soldier the right way in a hands-on environment will eliminate this problem. Soldiers who move from one section to another will follow the same procedure for PMCS wherever they go, and will be able to enforce it once they become leaders and supervisors. A good PMCS certification program will get everyone on "the same sheet of music."

As we have seen, it is imperative that units develop and implement a PMCS certification program. Executing such a program will prevent shortcuts, emphasize maintenance in the unit, increase leader involvement, and establish a standard throughout the battalion. It will also increase the knowledge of the individual soldier and give him a better understanding of the reasons for conducting PMCS. As the baseline for all maintenance programs, proper PMCS will improve the performance of the unit's equipment and therefore its overall combat readiness. As a combat multiplier, PMCS certification will prove critical on the next battlefield, when our soldiers go to war with equipment that works right the first time, every time.

Captain James D. Nielson, when he prepared this article, was battalion motor officer, 1st Battalion, 12th Infantry. His previous assignments include rifle platoon leader, rifle company executive officer, and battalion adjutant in the 3d Battalion, 505th Infantry. He is a 1995 graduate of the United States Military Academy.

Command Post Operations
For a Company Heavy Team at JRTC

LIEUTENANT BRIAN L. COMPTON

It's 1600 hours, Day 5 in the "Box" during a Joint Readiness Training Center (JRTC) rotation; the main supply route is cleared south of Fullerton landing strip. We have "jumped" our assembly area of more than 60 vehicles for the second time today and are set up half a kilometer southeast of the landing strip. A message is received from our parent brigade, saying there will be a heavy drop in one hour, exactly where we are sitting. The heavy team is relocating again.

Now is not the time for planning; it is time for standing operating procedures (SOPs) to take over and execute.

Effective command post (CP) operations are essential to the success of the heavy team at the JRTC, and their mastery will be a vital aspect of combat

as well. I served as executive officer (XO) for a company (plus) heavy team rotation, which consisted of two Bradley platoons, two tank platoons, an engineer platoon with dozer assets, a support platoon, a fire support team (FIST), a medical section, and two maintenance teams. With all of this under one company commander, it was my mission to act as XO or battle captain, track and support these assets, and serve as a mini-battalion tactical operations center (TOC). The success of the heavy team's mission depends on effective tracking systems, trained shift personnel, established net priorities, SOPs for company command post setup, and most important, flexibility throughout all operations.

An effective tracking system involved three separate working charts:

The first chart included the vehicle status of mission capable vehicles—by type, logistical and personnel requirements, platoon strength, platoon and attachment location, platoon and attachment mission, brigade and battalion TOC locations, frequencies, and challenge and password. This chart was large enough to read easily from a few feet away but small enough to store easily. Having this information allowed for the smooth flow of reporting and easier transition as our unit was task organized under other units and also as we received attachments.

The second chart was a significant-action chart. The format used was an abbreviated SALUTE (size, activity, location, unit, time, and equipment)

Current Disposition

UNITS	TASK ORG AR/IN	LOCATION MISSION PERSONNEL OFF/WO/EN	SLANT FMC M1/M2/RS	MAINT DOWN	MILES DOWN	White1 As Req	White2 0500/1700	Red 3 As Req	Red 6 0600/1800	Blue 1 0600/1800	Amber 1 0900	Amber 2 As Req	Amber 3 As Req	Amber 8 As Req	Cdr DRs 2400	PERS	CL III	CL V	WPNS
																Green >80%		Red <50%	
																Amber >70%		Black <30%	
RED PLT Callsign:___			/ /													GARB	GARB	GARB	GARB
WHITE PLT Callsign:___			/ /													GARB	GARB	GARB	GARB
BLUE PLT Callsign:___			/ /													GARB	GARB	GARB	GARB
GREEN PLT Callsign:___			/ /													GARB	GARB	GARB	GARB
ENG			/ /																
FIST			/ /																
STL WRENCH			/ /																
HEL WRENCH			/ /																
MEDICS			/ /																
64th FSB			/ /																
HQ PLT			/ /																
TMA TOC		2-1 IN TOC			FA TOC														
172 BDE TOC		1/501 BN TOC			ENG CO														
Challenge and Password:						Battle Captain:					NCOIC:								

This significant action chart is an example of the charts used in the CP.

report, placed on a butcher board or dry erase board. This chart helped provide a running estimate to develop the situation, as well as ideas on the current enemy course of action.

The last chart used was an enlarged 1:25,000 map, along with a legend for confirmed or suspected minefield positions, confirmed or suspected enemy positions, and friendly positions. Color-coded tabs were placed in each friendly and enemy element position on the map and updated as the battle progressed and unit locations changed.

A company battle captain needs a well-trained shift crew for efficient decision making. The battle captain's shift consisted of one officer, one noncommissioned officer, and four enlisted men. A battle captain prioritizes what the commander needs to know, tracks the battle, and makes any necessary suggestions to, or decisions for, the commander. A good working relationship with the company team first sergeant and the battle captain or shift NCO is essential. If these leaders compare notes at least once a day, it is much easier to track the flow of casualties and replacement soldiers. The shift NCO's job is to supervise the three enlisted men and to stand in for the battle captain in his absence. Two of the four soldiers—radiotelephone operators—monitor battalion, company, and administrative/logistical (A/L) radio nets. A third soldier updates the friendly and enemy positions on the map as the battle progresses and provide any necessary graphics on order. The fourth soldier serves as a recorder who keeps the significant actions chart updated, as well as the personnel/log chart.

At the JRTC, the company team must be able to monitor three nets at all times: the company net, the parent unit's net, and a company A/L net. This meant we had to have two vehicles at the CP at all times. Our unit used the first sergeant's M113 and either the FIST vehicle or the engineer platoon leader's M113. The FIST-V is the ideal choice, if the mission allows, because of its three-net capability.

Our unit SOP for the setup of the command post consisted of a frame tent covered by a camouflage net with support system along with two OE-254 antennas. Two M113s were backed into opposite ends of the frame tent with ramps dropped. Field desks were set up, with speaker boxes placed on them, s well as hand mikes for each net. All necessary tracking charts were hung around the frame of the tent.

This CP setup was extremely flexible. It was possible for setup and teardown to be completed in 45 minutes or less. It was also possible to leave the tent and become a mobile CP at a moment's notice. Units need to be able to accomplish this because of the frequency of indirect fire, chemical strikes, and direct fire from enemy air, personnel carriers, and tanks. To make it more difficult for the enemy to pinpoint our position, our unit would reposition the assembly area daily, eliminating the need to reposition on short notice. This would be done at least once every 24 hours and at most three times in a day, depending on the enemy situation. This turned out to be an effective tactic. The CP was never destroyed by indirect fire, nor did we receive a chemical strike during our time in the maneuver box.

To be successful at the JRTC, a company heavy team needs to establish solid SOPs that involve solid battle tracking systems, trained shift personnel, established net priorities, established tracking systems, trained shift personnel, established net priorities, established command post setup—and most important, the ability to remain flexible throughout the fog of war.

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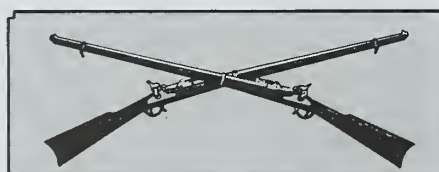
BOOK REVIEWS

Hap Arnold and the Evolution of American Airpower. By Dik Alan Daso. Smithsonian Institution Press, 2000. 314 Pages. $29.95. Reviewed by Colonel Cole C. Kingseed, U.S. Army.

Few officers have had careers more distinguished than that of General of the Air Force Henry "Hap" Arnold, Commanding General of the Army Air Forces in World War II. In the first full-length biography based primarily on Arnold's personal papers and recently declassified federal documents, Air Force pilot and author Dik Daso examines the career of the officer whose vision laid the foundation for the technology, infrastructure, and philosophy of today's U.S. Air Force. This current biography is Daso's second contribution toward portraying Arnold as one of the 20th century's greatest military leaders. (The first was *Architects of American Air Supremacy: General Hap Arnold and Dr. Theodore von Karman,* 1997.)

Daso takes more than a traditional biographical approach to a man's life. In his effort to present a fresh look at the life of the Air Force's only five-star general, he focuses on the critical elements of science and technology that so influenced Arnold's life. He offers a provocative parallel that portrays Arnold's story as an evolution and a struggle for the development and acceptance of an air force as a legitimate element of military power. Daso contends that it is his subject's journey through history—not his final destination in history—that offers the most critical insight into the mind of the commander of the most powerful air force ever assembled.

When he graduated from West Point in 1907, Arnold received a commission in the infantry, but his heart was in the cavalry. Four years later he volunteered for the Aeronautical Division of the Signal Corps. Under the tutelage of Wilbur Wright, Arnold received his pilot's license and embarked on a career that eventually led to the pinnacle of his profession. Although he was destined never to fire a bullet or drop a bomb in combat, Arnold quickly grasped the potential of the airplane and dedicated his career to the advancement of air power.

The interwar years produced disillusion-

ment and declining budgets, but in 1929, Arnold began a decade of command experience, ranging from overseeing distribution of supplies, research and development, airmail operations, and transcontinental flights. With such vast experience in virtually every aspect of air operations, Arnold also refined his skills as an adroit Washington bureaucrat, increasingly comfortable within both the political and the industrial arenas. In 1935 he received his general's star, taking command of the West Coast Division of the newly constituted General Headquarters, Air Force. Arnold was elevated to Chief of the Army Air Corps three years later and in 1941, became commanding general, Army Air Forces (AAF).

Over the course of World War II, Arnold had every bit as much influence on the conduct of the air war as General George C. Marshall had on the strategic planning of the ground war. His personal intervention to garner congressional support for production of the B-29 bomber and his continual efforts to perfect the AAF organization were his greatest contributions to victory. Ironically, Daso says, Arnold's most prescient judgment may have been the one that required him to defer action. To separate the Army Air Forces in the midst of a global conflict would have interfered with many other, more critical plans and programs. Long an advocate of an independent air service, Arnold placed his dreams on the back burner until victory was won.

Toward the end of his life, Arnold delineated the three components of what he felt constituted a successful military career. The first prerequisite was basic knowledge: "exact, clear knowledge; not a hazy smattering." Arnold's knowledge of the basics of the military profession was the air chief's "technique" that constituted the tools of the profession. To this knowledge, Arnold added unrelenting hard work—the same puritanical work effort that characterized his years on the Army general staff and within the halls of power in Washington, D.C. Finally, Arnold listed the most important element: *vision,* the key of which was to look beyond an immediate assignment to envision possibilities yet to be developed. It was his ability to conceptualize new hori-

zons of activity that converted Arnold's dreams into realities.

In the final analysis, Daso presents an interesting sketch of America's foremost air commander, and adds significantly to our knowledge of the struggle for parity among the various military services. Though his analysis at times borders on idolatry, Daso achieves his purpose in presenting Arnold as a pioneer who advanced the evolution of American air power. Though *Infantry* readers might enjoy more combat and operational history in this biography, the author reminds us that Arnold fought World War II not in the field, but in Congress, on the Army General Staff, in factories, and in universities.

Haig: A Reappraisal 70 Years On. Edited by Brian Bond and Nigel Cave. Leo Cooper, 1999. 271 Pages. $36.95. Reviewed by Lieutenant Colonel Harold E. Raugh, Jr., U.S. Army, Retired.

British Army Field Marshal Sir Douglas Haig, Commander-in-Chief of the British Expeditionary Force (BEF) during World War I, has become known as the epitome of the military "butcher and bungler." He remains best known for the unprecedented carnage at the Somme in 1916, where a shocking 60,000 casualties were suffered on the first day of the battle with about a half-million total casualties incurred during the four-and-a-half month operation; and Passchendaele (Third Ypres) the following year, where another 275,000 British casualties were sustained. As a result, Haig's reputation continues to arouse controversy and interest.

Through the ensuing years and the release of relevant documents, less emotional and more detached assessments of Haig's wartime generalship have been made. This superb anthology, edited by Brian Bond and Nigel Cave to mark the 70th anniversary of Haig's death in 1928, consists of 14 essays written primarily by members of the British Commission for Military History and the Douglas Haig Fellowship. As a result, this volume is "unapologetically 'pro-Haig'," not in terms of demonstrable bias, but "in the sense that the editors and a majority of

contributors believe that [Haig] has been misunderstood, misrepresented and excessively criticized."

This collective reappraisal includes controversial topics and others that illuminate less-known aspects of Haig's career and personality. Haig's relationships with his political masters, military superiors, and Allies—as well as his subordinate commanders (and subsequently with historians)—are chronicled and assessed in detail. Other essays show that, contrary to earlier perceptions, Haig generally supported the development and employment of tanks, various mortars, machineguns, and other technological innovations that would help break the deadlock of trench warfare on the Western Front. Haig's judicious use of punishment in maintaining the discipline of the BEF is the subject of another well-researched chapter. Concluding essays focus on Haig's relationship with his soldiers and his association with the British Legion, and the role of religion in his life.

This interesting volume is revisionary in nature and reappraises many aspects of Haig's generalship and character. The view of Haig that generally emerges from these essays is one of a much more competent and conscientious commander than previously recognized. Near the end of World War I, a young officer remarked that even under the most demanding combat conditions, Haig "managed to convey to every man who served under him his own resolution and singleness of purpose." The achievements and attributes of such a leader are always worthy of study.

The Western Front: Ordinary Soldiers and the Defining Battles of World War I. By Richard Holmes. TV Books LLC, 1999. 224 Pages. $26.00, Hardcover.

Verdun. By David Mason. The Windrush Press, 2000. 202 Pages. $24.95. Reviewed by Colonel Christopher B. Timmers, U.S. Army, Retired.

If you are not familiar with much of the land warfare of World War I, Richard Holmes's work is an excellent primer. Toward the close of the book, he includes a four-page summary, "The War in Outline," which—despite its brevity—relates all major events and key battles from 1914 to the Armistice on 11 November 1918.

If you have more than a passing familiarity with the carnage of the ground conflict in that war, then David Mason's thoroughly well written and readable text will provide a more specific and detailed account of a battle that is now remembered by many for

Marshal Petain's famous declaration: *"Ils ne passerant pas"* (they shall not pass).

As for virtually all other wars, numbers can prove fascinating, and illuminating as well. The length of the Western Front encompassed a stunning linearity over 450 miles long, from the North Sea to the (neutral) Swiss border. More numbers, thrown into the mix, are even more breathtaking: *During the whole war 5,253,538 tons of ammunition were shipped to France, but even this was exceeded by the 5,438,603 tons of fodder for the Army's horses and mules. The* [British Expeditionary Force's] *animal strength peaked at 449,800 in 1917.* Getting more specific, with respect to Verdun, Mason claims that *In the ten months to December 1916, the French and German armies used an estimated 10,000,000 artillery shells against one another at Verdun. Some 1,350,000 tons of steel were dropped on the narrow battle zone north of the city."* And this shell expenditure was on a front less than 15 miles wide. Finally, the numbers in terms of human life: The Western Front claimed over three-fourths of a million lives, French, German, and British. Verdun, in terms of total casualties (killed, wounded, missing) cost the French more than 378,000 men, the Germans 337,000. Further, what the Germans and French lost in men during the 10 months at Verdun amounted to more than half of all casualties suffered by the British in World War II.

It has been popular to blame the appalling loss of life in World War I on the generals, especially on the Allied side. Severe criticism of German generals by their own men is, at least in English translation, rather hard to come by. Hollywood has been typically hard on English and French generals, especially in films like *Gallipoli* (English indifference to the loss of lives) and *Path of Glory* (a scathing indictment of a French general whose megalomania or paranoia is responsible, not just for the useless slaughter of young infantrymen, but for the arbitrary execution of three soldiers who are accused of cowardice and selected for execution by the random drawing of lots.)

Holmes, however, gives a substantially different and more sympathetic picture of generals and their staffs. Fifty-eight British generals were killed or died of wounds received on the Western Front. Three division commanders were killed at Loos in 1915. Soldiers' respect for their officers extended up through the ranks to division commander (major general). Beyond that, generals were an abstraction; they, and their staffs, could be blamed for anything. Holmes quotes W.N. Nicholson, an officer with divisional

staff experience: "A man can issue orders till he's blue in the face; he can write—and the best of his orders and letters will be criticized. But if he'll come and let his soldiers see him, they'll do anything he asks them."

Mason discusses the French general staff in quite specific terms and fingers Joffre for the failure to recognize Verdun's strategic importance. It was left "under resourced in men and artillery." He would not believe Verdun could be the object of a German offensive. The French general staff time after time launched poorly supported counterattacks to reclaim modest German advances. Again, we see the shortsightedness of generals not at the divisional level but at corps and higher commands.

But as under-resourced as it was, Verdun was still a redoubtable position. Von Falkenhayn had launched the attack to "bleed the French army white." In doing so, the Germans submitted to doctrine rather than reality. Mason quotes Churchill's *The World in Crisis*; the future Prime Minister wrote, "Attack the strongest at his strong point, not the weakest at his weakest point," was once again proclaimed the guiding maxim of German military policy.

Holmes's work is the best book to date on the Western Front. Read it for background and for context. Then, for an excellent account of the most costly battle on that front, read Mason. It will require an investment of time and just over $50. Both will be richly rewarded.

The Book of War. Edited by John Keegan. Viking, 1999. 496 Pages. $34.95. Reviewed by Lieutenant Colonel Albert N. Garland, U.S. Army, Retired.

John Keegan is a well-known military historian and prolific writer. In this anthology, he has assembled extracts from 66 previously published histories, memoirs, speeches, and eyewitness accounts, first, "to chronicle the evolution of western warfare" and, second, to demonstrate that all forms of warfare" are "essentially inhumane." (All of these writings were previously published except for one. The exception, an extract from a William Dunbar manuscript, is found on pages 99-102.) Each extract is preceded by a historical note prepared by Keegan that puts it in its proper historical setting.

To these 66 narrative extracts, Keegan has added 16 poems, some complete, others not. Only a few have short comments added by Keegan, and these usually appear as brief notes at the end of the poems.

The narrative extracts themselves run the

gamut from the writings of Thucydides to Xenophon, on to Andrew Wheatcroft, James Fremantle, Erwin Rommel, E.L. Spears, John Masters, Ernie Pyle, and end with the Gulf War (1990-91) experiences of Andy McNab (a pseudonym). Among the better known poems, at least to most U.S. readers, are Robert Southey's *The Battle of Blenheim*, Victor Hugo's *Russia 1812*, Alfred, Lord Tennyson's *The Charge of the Light Brigade*, Rudyard Kipling's *Tommy*, John McRae's *In Flanders Fields,* and Siegfried Sassoon's *The Hero*.

Keegan has divided his anthology into three parts, of unequal lengths, although a reader should also read his introduction. Part one, some 23 entries, stretches from the Peloponnesian War (5th century BC) to the battle of Hohenlinden (1800 A.D.). In this opening part, Keegan "is particularly concerned with war between different cultures." I admit that I became confused as I worked my way through these extracts and poems, for I could not understand why the accounts of the battles of Crecy and Agincourt were included, or why Keegan allotted so much space to the American Indans' penchant for torturing and then killing their captives in the most horrible ways. (In a previously published book, *The Fields of Battle: The Wars for North America*, 1995, Keegan delved deeper into this aspect of American Indian life and culture.)

Part two, 17 items—the shortest of the three parts, presents extracts and poems taken largely from British sources. These are concerned with "the warfare of regular armies in the age of established European states: and with "The European impulse to empire." The writings cover the period from the Napoleonic Wars to the beginning of World War 1, and concentrate on British Army soldiers in combat or preparation for combat in Europe, the Crimea, Africa, and India.

The final section is the longest, with 42 extracts (including poems). These cover the period of time from the outbreak of World War I to the Gulf War. Again, the largest number of extracts are from British sources. They are about evenly divided among World War I, the interwar years, and World War II. Two are from the Vietnam War era, and a third, mentioned earlier is from the Gulf War.

I was also concerned as I read the various extracts and poems at the lack of attention paid to naval and air matters. Keegan does mention these matters, in a limited way, in several of his notes, but I believe these two facets of war deserved more attention.

I was disappointed in the book's overall thrust. But Keegan did go a long way toward proving his thesis that "all forms of warfare" are "essentially inhumane."

North Korean Special Forces. Second Edition). By Joseph S. Bermudez, Jr. Naval Institute Press, Annapolis, Maryland, 1998. 328 Pages. $39.95. Reviewed by Michael F. Dilley.

Ordinarily, a second edition of a book doesn't get a separate review, other than perhaps a passing comment that a revised edition is available. Book buyers often shy away from buying a second edition, mostly because they don't believe the price is worth the new material. This is especially true if they already own the previous edition.

On occasion, the second edition of a book differs greatly from the previous version, as is the case with Joseph S. Bermudez, Jr.'s *North Korean Special Forces.* You could almost make the argument that these are two different books—almost. Obviously the subject matter is the same and the broad discussion, including the historical background, is similar. This new version is so largely expanded that it is practically a new book. Another defense is the publisher; Jane's published the first version of this book, in 1988.

One of the hallmarks of Mr. Bermudez's work is that all of his research is based on open source material. As he points out early in his extensive bibliography, this includes, for this work, both declassified and unclassified U.S. Government publications as well as many books and articles from other sources. Only one, *North Korean News*, appears to be published in North Korea. I mention this to make the point about the difficulty of writing a book without having available a variety of sources from the country being discussed.

The new version is much better than the original, not just because it has more material in it. It is better organized, and covers the subject matter better. *North Korean Special Forces* may seem a bit dry, but it is well worth reading and adding to a library. I recommend this book, not just to military history students but especially to those who focus on the more narrow field of special purpose, special mission organizations.

Ripcord: Screaming Eagles Under Siege, Vietnam 1970. By Keith W. Nolan. Presidio Press, 2000. 447 Pages. $29.95, Hardcover. Reviewed by Dr. Joe P. Dunn, Converse College.

Keith William Nolan is the combat chronicler of the Vietnam War. This, his tenth battlefield account, tells the saga of what he calls the last major infantry battle of the Vietnam War. In April 1970, the 101st Airborne established Firebase Ripcord on Hill 927, a remote area just north of the A Shau Valley, an area of contention from the first years of the conflict. The base constituted a dagger pointed at the heart of North Vietnamese control of the valley. After months of careful preparation and encircling the site, the North Vietnamese started shelling the base on July 1, and the siege began. Fierce fighting occurred on the surrounding ridges as well. An annotated map on the body of a dead NVA soldier depicted the forthcoming assault on Ripcord and indicated the overwhelming odds the defenders faced.

At this point in the war, the United States was dedicated, above all else, to minimizing casualties. Firebase Ripcord was ordered evacuated and then destroyed by air strikes. The attempted extrication on July 22 and 23, however, became a disaster as the 101st took heavy casualties in the retreat. During the 23-day siege, the Screaming Eagles lost 74 KIA, 400 WIA, and 13 MIA. Because the Cambodian Incursion was dominating the press and the U.S. banned reporters from Ripcord in the latter stages, the battle attracted little media attention. This gave the 101st the opportunity to minimize the event and indeed to attempt to whitewash the North Vietnamese victory.

Nolan undertook this project both to fill a gap in the historical record of the war and to honor the soldiers who fought courageously at Ripcord. He says that the men who displayed such stunning courage at the ill-fated firebase won "a personal victory inside a larger defeat." He continues that the circumstances of that defeat—including indecision, restraint, and limited effort against the enemy's total commitment—made Ripcord "something of a tragic metaphor for the entire Vietnam War."

Although Nolan may exaggerate the import of this particular engagement, this book is another example of his trademark—gripping battle histories that illuminate the nature of war. This may be his best work to date. Certainly, it won't be his last.

A Bohemian Brigade: The Civil War Correspondents, Mostly Rough Sometimes Ready. By James M. Perry. John Wiley, 2000. 305 Pages, Photographs, Maps. $27.95, Hardcover. Reviewed by Lieutenant Colonel Dominic J. Caraccilo, U.S. Army.

"I am en route to Washington with details of a great battle. We have carried the day." Thus read the headline of the *New York Herald* about the perceived Union success in that seminal foray the day after the first Civil War battle at Bull Run. General William Sherman vilified the *Herald* reporters as "the buzzards of the press." George G. Meade "strapped one of them backward on a mule and rode him out of camp" complete with a sign embellishing him as "Libeler of the Press." In fact, Army commanders on both sides distrusted a free press they could not control. The "scoundrels" in this event are the reporters who roamed the battlefields chasing a story.

The self-proclaimed Bohemian Brigade was a "group of men who tried to make sense of the most dramatic event in American history" and they did it by writing columns in various newspapers for the Union, the Confederacy, and at points abroad. Author James M. Perry writes that the Civil War reporters, to many, were a preposterous, controversial, infuriating, and disarming band of rogues and heroes. Perry, himself a journalist and author of *Arrogant Armies* and recipient of the prestigious Fourth Estate Award, is a modern day version of those who packed the Civil War battlefields and then scurried to send their messages and stories, either in person or by telegraph. This is what makes *A Bohemian Brigade: The Civil War Correspondents* unique; it is written by a son of their own, someone who is well qualified to develop this wonderfully constructed chronicle of those who reported on the war between the states.

From the battlefield of the first encounter at Bull Run came the scouring assembly of news-seekers such as Charles Charleton Coffin, Henry Villard, and Uriah Painter of the North, Peter Alexander and Felix Gregory de Fontaine who worked for Southern papers, and William Howard Russell of the *Times* of London. In this first deployment of the Bohemian Brigade, the results were mixed at best.

As described on the inside cover of the dust-jacket, "much of our understanding of the U.S. Civil War is based upon newspaper dispatches written under horrible battlefield conditions, and journalists' memoirs penned under more reflective moments after the war's end. As a result, modern American journalism emerged from the Civil War, and Perry makes it clear that, thanks to the telegraph and the importance placed on breaking news and scoops, the conflict was the first instant-news event. It was a time of sending messages using 'the lightning' or the telegraph."

Perry draws upon his experience as a newspaperman to show, for better or worse, that for the most part, these reporters put their lives at risk on the battlefield, and he brings each reporter, "rogues and heroes alike," to life in this wonderfully crafted book. There is no doubt they were pompous, arrogant, and highly inventive, that they lied and cheated, got the story wrong more often than they should have, and drank too much. By his own admission, Perry claims that, "They did a lot of things reporters are still doing today."

But Perry admits that, for all their faults, these were correspondents who endured Civil War prisons, battlefield skirmishes, and intense colleague competition to get the story to print. In short, it is wonderfully readable narrative worthy of revealing the historical significance of the battlefield reporter.

RECENT AND RECOMMENDED

The Greenhill Dictionary of Military Quotations. Edited by Peter G. Tsouras. Stackpole, 2000. 600 Pages. $49.95.

Cambrai: The Right Hook Hindenburg Line. By Jock Harsfall and Nigel Cave. Leo Cooper, 1999. 176 Pages, photos. $16.95.

The British Army: A Pocket Guide 2000-2001. By Charles Heyman. Leo Cooper, 2000. 185 Pages. $9.95.

Riflenian: Elite Soldiers of the War Against Napoleon. By Philipp Elliot-Wright. Publishing News Ltd., 2000. 144 Pages (large format, b&w and color art). $34.95.

Highlander: Fearless Celtic Warriors. By Stuart Reid. Publishing News Ltd., 2000. 144 Pages (b&w and color illustrations). $34.95.

Fire & Ice: The Korean Conflict 1950-1953. By Michael Varhola. Stackpole Books, 2000. 240 Pages, maps, photos. $24.95.

Silent Warrior: The Marine Sniper's Story Continues. By Charles W. Henderson. Berkley Books, 2000. 302 Pages. $21.95.

World War II in Photographs. By Richard Holmes. Carlton (4720 Boston Way, Lanham, MD 20706), 2000. 400 Pages, more than 500 photographs. $50.00.

How They Won the War in the Pacific: Nimitz and His Admirals. Lyons Press, 2000. By Edwin P. Hoyt. 558 Pages. $24.95, Softbound.

John Glenn: A Memoir. By John Glenn with Nick Taylor. Bantam Books, 2000. 560 Pages. $7.99.

Allied Special Forces Insignia 1939-1948. By Peter Taylor. Combined Publishing, 2000. 220 Pages. $39.95.

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War in the Modern World. By Theodore Ropp. First published by Duke University Press, 1959. Johns Hopkins University Press, 2000. 424 Pages.

Currahee! By Donald R. Burgett. First published 1967. Dell Books, 2000. 256 Pages. $6.50.

Combat Service Support Guide. Third edition. Stackpole, 2000. 288 Pages. $16.95, Softbound.

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The following directory is offered as an aid to people in the field who may have questions they want to ask the various departments and divisions of the Infantry School. All telephone numbers are DSN. To call the Fort Benning numbers on commercial lines, use area code 706; then convert 835 prefixes to 545 and 784 prefixes to 544. (For the 5th Ranger Battalion, use area code 706, and convert 797 to 864. For the 6th Ranger Battalion, use area code 850 and change 872 to 882.)

In addition to these points of contact, the Infantry School maintains a hotline specifically to receive questions and comments from the field. The number is DSN 835-7693; commercial (706) 545-7693. Questions are recorded, and answers are returned within 48 hours. Lengthy questions or comments should be sent in writing to Commandant, USAIS, ATTN: ATSH-OTE, Fort Benning, GA 31905-5593.

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Chief of Staff, U.S. Army Infantry School	
COL Lonnie Dale Vona	835-5251
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Director, COL Paul E. Melody	835-4539
Combined Arms and Leadership Division	835-6217
Doctrine Division	835-6919
INFANTRY Magazine	835-2350
Tactics Division	835-5726
Military History Division	835-5610
Directorate of Combat Developments	
Director, COL Frank J. Stone	835-1316
Clothing and Individual Equipment Division	835-6407
Electronics and Special Developments Division	835-4952
Firepower Division	835-1016
Concepts Analysis Integration Division	835-5413
Small Arms Division	835-1910
Test and Evaluation Division	835-2416
Mounted Systems Division	835-1644
Directorate of Operations and Training	
Director, Robert W. Brown	835-5717
Aviation Division	835-4680
National Infantry Museum	835-2958
Operations, Plans, and Mobilization Division	835-1612
Range Division	835-4619
Systems Division	835-1619
Training Development Division	835-5298
Training Support Center	835-2132
Dismounted Battlespace Battle Lab	
Acting Director, Richard Caravana	835-5167
Battle Command Division	835-7008
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Expanded Battlespace Division	835-5261
Forced Entry Lab	835-9621
Simulation Center	835-7000
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United States Marine Corps Representative	835-5989

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Commander, COL Thomas W. Hayden	784-8216
1st Battalion, 19th Infantry	784-9513
1st Battalion, 38th Infantry	784-9816
1st Battalion, 50th Infantry	784-0006
2d Battalion, 19th Infantry	784-8381
2d Battalion, 54th Infantry	784-9121
2d Battalion, 58th Infantry	784-9368
30th AG Battalion (Reception)	784-9902
Basic Combat Training Brigade	
Commander, COL Thomas A. Cole	784-8562
Ranger Training Brigade	
Commander, COL Hazen L. Baron	784-6911
4th Ranger Training Battalion (Benning Phase)	784-6211
5th Ranger Training Battalion (Mountain Phase)	797-3327
6th Ranger Training Battalion (Florida Phase)	872-1162
29th Infantry Regiment	
Commander, COL Gordon H. Mereness, Jr.	835-8667
Maintenance Management Division	784-6517
1st Battalion, 29th Infantry Regiment	835-8667
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Co B	784-7582
Co C (BIFV Company)	784-7476
Bradley Instructor Company	784-6394
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2d Battalion, 29th Infantry Regiment	784-8516
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Co B (Antiarmor Committee)	784-7529
Co C (Small Arms Committee/Marksmanship)	784-7507
Co D (Tactics/Sniper Training/Mortars/NETT)	784-7697
11th Infantry Regiment	
Commander, COL Steven Sifers	835-4301
1st Battalion, 11th Infantry	835-1962
2d Battalion, 11th Infantry (IOBC)	835-1666
3d Battalion, 11th Infantry (OCS)	835-4711
1st Battalion, 507th Infantry (Airborne)	835-1035
NCO Academy	
Commandant, CSM George R. Monk	835-2233
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ARNG, COL Larry D. Jayne	835-5741
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